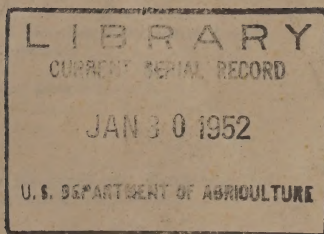


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**REPORT OF THE ADMINISTRATOR
OF THE
PRODUCTION AND MARKETING
ADMINISTRATION
1951**



UNITED STATES DEPARTMENT OF AGRICULTURE

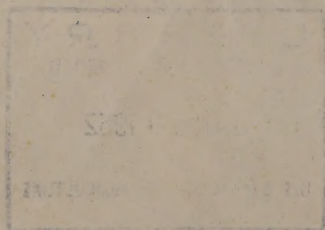
REPORT OF THE ADMINISTRATION

OF THE

FOREIGN AND DOMESTIC

RELATIONS

1921



U. S. DEPT. OF STATE, WASHINGTON, D. C.

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The following is a detailed description of the content of the document. The document is a technical report or thesis, likely in the field of engineering or physics, given the nature of the chapters and appendices. The title page (102) includes an introduction and acknowledgments. Chapter I (103) discusses general principles, Chapter II (104) covers theoretical foundations, Chapter III (105) details experimental methods, Chapter IV (106) presents results and discussion, and Chapter V (107) provides conclusions and recommendations. The appendices (108-112) include data tables, mathematical formulas, a bibliography, an index, and a summary. The text is written in a formal, academic style, with clear headings and subheadings. The document is well-organized and easy to navigate, with a clear flow of information from the introduction to the conclusion. The use of appendices allows for the inclusion of supplementary material without cluttering the main text. The index and bibliography provide additional context and resources for the reader. The overall structure of the document is typical of a technical report or thesis, and it effectively communicates the findings and conclusions of the research.

Report of the Administrator of the Production and Marketing Administration, 1951

UNITED STATES DEPARTMENT OF AGRICULTURE,
PRODUCTION AND MARKETING ADMINISTRATION,
Washington, D. C., October 12, 1951.

HON. CHARLES F. BRANNAN,
Secretary of Agriculture.

DEAR MR. SECRETARY: I present herewith the report of the Production and Marketing Administration for the fiscal year ended June 30, 1951.

Sincerely yours,

GUS F. GEISSLER,
Administrator.

THE YEAR IN SUMMARY

Programs of the Production and Marketing Administration (PMA) during the fiscal year 1951 were tailored to an economic situation of high demand for food and fiber, relatively favorable prices received by farmers, and some decline in supplies. As defense needs for agricultural commodities increased, emphasis was shifted—with initiation of acreage and production goals and procedures to assure availability of necessary materials and facilities—from production adjustment to production expansion. Price-support activity dropped off sharply, support extended on 1950 crops in terms of dollars being less than half that on 1949 crops. Strong demand and rising prices put pressure on commodity supplies, and controls over distribution were required in a few instances. Related production and marketing programs, such as agricultural conservation, domestic food distribution, export activities, marketing services, and research, were geared closely to the over-all defense food effort.

Production Expansion

It was apparent, following the invasion of South Korea by the Communists, that increased domestic, foreign, and military demand for agricultural commodities would require a sharp stepping up of production. Although no action could be taken with respect to 1950 crops, which had already been planted, a number of important moves were made during the year to expand production of crops planted in 1951.

In October 1950, Secretary of Agriculture Charles F. Brannan announced that there would be no acreage allotments or marketing quotas on 1951-crop cotton; and, early in 1951, acreage allotments were taken off 1951-crop, corn, wheat, and rice. In the case of dry

edible beans and potatoes, no acreage allotments on 1951 production were announced. Public Law 17, Eighty-second Congress, had the effect of raising acreage allotments for peanuts, while allotments for burley and flue-cured tobaccos were raised by the Secretary of Agriculture to meet increased requirements.

Experience in World War II had proved the effectiveness of establishing definite acreage and production objectives. This technique was put into use again in October 1950, when it was suggested that farmers produce at least 16,000,000 bales of cotton to close the supply gap left by an increasing demand for cotton and a small 1950 crop of approximately 10,000,000 bales. After a review of requirements for other crops, 1951 "production goals" were announced for corn, oats, barley, grain sorghums, spring wheat, rice, dry edible beans, soybeans, flaxseed, sweetpotatoes, vegetables, winter cover crop seeds, and hay and pasture seeds.

World War II experience also had demonstrated that high-level agricultural production can be obtained and channeled to consumers only if farmers and processors, distributors, and other handlers of farm products are able to purchase necessary machinery, equipment, supplies, and facilities. During the year the Secretary of Agriculture was delegated authority under the Defense Production Act of 1950 to take action to assure agriculture and related industries availability of essential materials and facilities. In line with authority delegated to it by the Secretary, PMA determined requirements and acted as claimant before allocating agencies. Also, under its delegated authority, PMA made recommendations relative to accelerated amortization for tax purposes of facilities needed to further the defense food effort, and screened applications for loans that might be needed to expand food and fiber production. Materials and facilities required by agriculture and supporting industries generally were adequate, although there were some local shortages of such items as crawler-type tractors, fertilizers, pesticides, barbed wire, baler twine, and burlap bags. But through close liaison between PMA, allocating agencies, and manufacturers, shortages did not become acute enough to hamper materially either production or distribution.

It seems fairly obvious that any plans for production expansion must, from now on, take into consideration one fact: Material additions to the total cropland acreage of this country cannot be expected. With a relatively stable acreage, increases in production will depend upon increases in crop yields. Use of machinery, improved seed, fertilizers, and chemicals for controlling insects and weeds will continue to push yields upward. But the agricultural conservation program—under which payments are made to farmers to encourage adoption of approved soil-conserving practices—is fundamental, because the land itself is fundamental.

Practices carried out by farmers under the program in the fiscal year 1951 included seeding of pastures and range land; planting of cover crops; constructing terraces, reservoirs, and dams; strip cropping; plowing on the contour; and applying lime and fertilizer. The program reached 2,577,000 farms, representing about 64 percent of the

Nation's total cropland. Funds available for the program totaled \$257,250,000 with assistance to individual farmers limited to \$2,500.

Agricultural production in the calendar year 1950, including both food and nonfood products, was 38 percent above the prewar (1935-39) average. Production in the calendar year 1951, it was estimated, would be 41 percent above the 1935-39 average.

Price Programs

Prices received by farmers for agricultural commodities as a whole in relation to prices paid by farmers for items used in living and production were favorable throughout the fiscal year. The parity ratio, which measures this relationship, stood at 103 in July 1950. (Parity is 100.) In November it had moved up to 105, and in February 1951, to 113. By June it had declined to 108.

This favorable price situation was reflected in greatly decreased price-support activity. Support extended on 1950 crops totaled \$1,163,000,000, as compared with \$2,683,000,000 on 1949 crops. Also indicative of the decline in support activity was the drop in the price-support "investment"—the dollar total of loans outstanding plus the value of inventories. The investment on June 30, 1951, was \$1,767,000,000, as compared with \$3,538,000,000 on the same date a year earlier.

Net realized losses of \$345,599,000 on the price-support program were due in large part to the liquidation of inventories of perishable commodities acquired under previous years' operations and to support of potato prices. Losses on dairy products amounted to \$111,000,000; dried eggs, \$76,000,000; and potatoes, \$63,000,000. But the inventory position with respect to perishable commodities at the end of the fiscal year, and the termination of some support operations indicated that price-support losses in the fiscal year 1952 would be materially smaller than in 1951. Inventories of dairy products were very small at the end of the year, and no early build-up of stocks was expected. Price support for eggs was terminated December 30, and support of potatoes ended with marketing of the 1950 crop.

As during the World War II period, price support during the year was integrated with the over-all production program. In the case of some commodities, such as long-staple cotton and grain sorghums, support prices were established at levels calculated to bring about increased agricultural output. For all supported commodities, the program made for abundant production by assuring farmers that large crops would not be followed by a collapse of market prices. This high-level production, in turn, helped to maintain "safe" reserves of many commodities, such as food and feed grains, needed to meet requirements in the months ahead.

The storage facilities program, complementary to the price-support program, was continued. At the end of the fiscal year, the capacity of grain-storage structures owned by the Commodity Credit Corporation (CCC) totaled about 545,000,000 bushels. Space for 93,000,000 additional bushels of grain had been approved under a storage-use guarantee program. Loans had been made for construction of on-farm bins and cribs having a capacity of 85,000,000 bushels. And right-of-entry agreements with other Government agencies made avail-

able an additional 2,000,000 bushels of capacity. The CCC's over-all storage facilities program, in other words, encompassed about 725,000,000 bushels of storage capacity on June 30, 1951.

Section 32, of Public Law No. 320, Seventy-fourth Congress, provides funds annually for the purpose of widening markets for American farm commodities through encouragement of exports, increased domestic distribution, or diversion to new markets or new uses. The following tabulation shows how section 32 funds were spent in the fiscal years 1950 and 1951.

	<i>Fiscal year 1950</i>	<i>Fiscal year 1951</i>
	<i>(Dollars)</i>	<i>(Dollars)</i>
Project obligations:		
Exports-----	24,686,505	24,459,920
Direct distribution-----	41,722,453	13,476,004
Diversion-----	7,484,394	2,250
Administrative expenses-----	3,858,792	3,688,190
Total above projects-----	77,752,144	41,626,364
Allotments and transfers to cooperating agencies-----	243,792	223,317
Total obligations-----	77,995,936	41,849,681
Unobligated balance (available for use in future programs)-----	47,612,873	116,956,844
Total funds available-----	125,608,809	158,806,525

It was announced on March 29, 1951, that the sales quota guaranteed the United States under the 1950-51 International Wheat Agreement program—248,164,000 bushels—had been filled. Wheat was sold under the Agreement during the year to 37 different countries, large quantities being sold to Germany (58,000,000 bushels), India (28,000,000), United Kingdom (24,000,000), Netherlands (21,000,000), and Italy (14,000,000). All wheat was sold at the maximum price under the Agreement—\$1.80 per bushel, basis bulk wheat in store at Fort William-Port Arthur, Canada, in terms of United States currency.

The CCC paid subsidies during the 1951 fiscal year of \$178,180,000 on 265,779,000 bushels of wheat—including sales under the 1950-51 IWA program and portions of the 1949-50 and 1951-52 programs—or an average subsidy for the fiscal year 1951 of 67 cents per bushel.

Adequate supplies of sugar at prices reasonable to both producers and consumers were assured through operations under the Sugar Act of 1948. Consumption requirements at the end of the year were estimated at 8,250,000 short tons, raw value—an increase of 750,000 tons over the requirements estimate effective on July 1, 1950. Adjusted quotas in effect on June 30, 1951, were: For domestic sugar-producing areas (mainland cane, domestic beet, Hawaii, Puerto Rico, and the Virgin Islands), 4,268,000 tons; for foreign areas—Republic of the Philippines, 782,000 tons; Cuba, 3,149,200 tons; and other foreign countries, 50,800 tons. Payments made to producers complying with certain labor, wage, price, and marketing requirements prescribed by law totaled about \$69,000,000.

Federal orders regulating the handling of milk increased from 37 to 41, the new orders issued covering the marketing areas of Memphis, Tenn.; Milwaukee, Wis.; Springfield, Mo.; and Puget Sound, Wash.

A total of 30 marketing agreement and order programs covering 22 different fruits, vegetables, and tree nuts from 28 different States were in effect.

PMA was delegated primary responsibility for determining, as required by the Defense Production Act of 1950, legal minimum prices below which ceiling prices on agricultural commodities cannot be established. In cooperation with other Department of Agriculture agencies, principally the Bureau of Agricultural Economics and the Office of the Solicitor, average legal minimum prices for 165 separate commodities were determined in accordance with criteria set forth in the act. At the end of the year, these average legal minimum prices were being adjusted for grade, season, and location differentials. Average prices received by farmers for most agricultural commodities still were below legal minimums in June 1951, the major exceptions being wool, beef cattle, veal calves, lambs, cotton, cottonseed, and crude pine gum.

Distribution Operations

Total demand for agricultural commodities was exceptionally strong during the year. The increased ability of domestic consumers to purchase the products of agriculture is shown by data on personal incomes, which rose from a seasonally adjusted annual rate of about \$223,000,000,000 in July 1950, to \$251,000,000,000 in June 1951. Stronger demand from abroad is indicated by the fact that food exports increased 25 percent over the previous year. This strong domestic and foreign demand for farm products put heavy pressure on supplies.

The first action to safeguard supplies was taken in August 1950, when sugar was placed under export allocation. Then, in September, cotton was placed under allocation to foreign countries and the volume of exports restricted to the extent necessary to assure proper division between domestic and foreign users. Before the fiscal year ended, controls had been placed on distribution of inedible molasses, cotton linters, spinnable types of cotton waste, wool, mohair, and certain imported industrial oils. Allocations of canned fruits and vegetables, established to meet requirements of the Armed Forces, were accompanied by "set aside" orders. It appeared at the end of the year, however, that favorable production prospects for some commodities might permit some relaxation of controls.

Exports of food from the United States in the fiscal year 1951 totaled 19,414,000 long tons, compared with 15,566,000 long tons exported the previous year. Bigger exports of grain—15,827,000 long tons in 1951, compared with 12,314,000 long tons in 1950, largely accounted for the over-all rise in export volume. Numerous factors could be cited to explain this increase in grain exports, but the fundamental considerations probably were larger consumption requirements in Western Europe and availability of United States grain.

PMA helped in several major ways to facilitate food exports during the year. It procured, through the Commodity Credit Corporation, approximately a third of the tonnage that went out of the country. It handled shipping and storage functions required to move PMA-

procured commodities for export from interior points to seaports—arranging, in some instances, for ocean transportation. And it cooperated with the Defense Transport Administration in activities under Defense Transport Order No. 2, instituted in March 1951, to relieve congestion at seaports.

The pressure of high demand and rising prices was felt especially in the case of inventories of storable commodities that had been acquired by the CCC under the price-support program. The dollar value of all CCC inventories on June 30, 1950, was \$2,624,000,000, but on the same date a year later, heavy disposal operations had reduced inventories to a total value of \$1,433,000,000. During this period, the cotton inventory dropped from 3,414,000 bales to 83,000; cottonseed oil from 17,000,000 pounds to zero; wheat, from 328,000,000 bushels to 196,000,000; and grain sorghums from 41,000,000 hundredweight to 16,000,000. Availability of these and other commodities undoubtedly helped to prevent prices from rising faster and farther than they did.

PMA was delegated authority under the Defense Production Act of 1950 to develop civilian food requirements and to represent civilians in all food-allocation procedures. In estimating requirements, consideration was given such factors as previous consumption patterns, anticipated demand, and needs of special groups, such as babies, invalids, and workers in heavy industries. As it turned out, however, food supplies were abundant enough to make allocations unnecessary, except for canned fruits and vegetables.

As authorized by section 416 of the Agricultural Act of 1949 and Public Law 471, Eighty-first Congress, certain perishable commodities acquired under the price-support program were distributed during the fiscal year 1951 to school lunch programs, charitable institutions, and welfare agencies concerned with the relief of needy persons within the United States and in foreign countries. These commodities had a cost value of about \$114,000,000 and included butter, 68,000,000 pounds; cheese, 26,000,000 pounds; dried milk, 123,000,000 pounds; potatoes, 3,000,000 hundredweight; and dried eggs, 35,000,000 pounds. Commodities distributed under "section 32" had a value of about \$13,000,000 and included apples, cherries, cranberries, dry edible beans, beets, cabbage, sweetpotatoes, honey, and turkeys.

PMA continued to cooperate with food trade groups in a broad program to increase the movement of plentiful foods through normal trade channels. A list of foods expected to be abundant was issued monthly and 22 special food "drives" were undertaken.

A total of 8.6 million children participated in the national school lunch program, an increase of 10 percent over the preceding year and a new high record. A Federal appropriation of \$83,500,000 for school lunch operations was greatly augmented by an estimated total contribution of \$280,000,000 from sources within the States.

Marketing Services and Regulation

About 1,000 miles of leased wire were added to the system that links the various offices of the market news service, increasing the total to a record 11,000 miles. Reports on naval stores were initiated. Also begun was the daily collection of data on truck shipment of fruits and

vegetables from Florida, the lower Rio Grande Valley of Texas, and California. Mimeographed market reports issued numbered 35,000,000 copies; radio stations regularly broadcasting market information totaled 1,300; and newspapers reprinting market news reports aggregated 1,200.

A number of standards for grade were revised and, for several important commodities, new standards were issued. Much of this work was carried on under authority of the Research and Marketing Act of 1946. Grading, inspecting, classing, and testing activities showed a healthy growth during the year, with considerable emphasis being placed on the development or improvement of devices for objectively measuring quality of agricultural commodities.

Under the Packers and Stockyards Act, a total of 333 stockyards was posted; 4,775 livestock market agencies and dealers were registered; and 1,563 poultry sales agencies were registered. Registration of economic poisons, authorized and directed by the Insecticide, Fungicide, and Rodenticide Act, numbered 6,858, bringing the total since passage of the act to 36,353. Licenses in effect under the Perishable Agricultural Commodities Act totaled 24,547. A total of 341 containers was examined under the Standard Container Acts of 1916 and 1928, 78 of which required correction. Over 100,000,000 pounds of agricultural and vegetable seeds were tested and admitted from foreign countries under the Federal Seed Act.

Marketing Research

Largely through funds available under the Research and Marketing Act of 1946, marketing-research work reached a new high peak. A number of important projects, however, were financed under the regular annual appropriation of the Department. The following selected examples are indicative of the broad field encompassed by PMA's marketing-research activities:

Twenty-two projects for planning and promoting the construction of satisfactory wholesale market facilities were active during the year. New wholesale market districts were nearing completion in St. Louis, Hartford, San Antonio, and Columbia (S. C.), and plans had been or were being developed for markets in 20 other localities, including Boston, Richmond, Indianapolis, and San Juan, P. R.

A search for improved handling methods led to development of sound-recording and transcribing equipment for use in loading out delivery trucks, thereby reducing labor requirements sharply. Details of this equipment are given in AIB 43, "Use of Recording and Transcribing Equipment in Loading Delivery Trucks of Produce Wholesalers." The improved check-out counter for self-service retail food stores, described in AIB 31, "The Check-out Operation in Self-Service Retail Food Stores," was installed in more than 1,000 stores during the year.

In the field of transportation, it was proved that losses of cantaloups shipped by rail can be reduced by a third if the crates are stacked on their ends rather than on their sides when loaded in the refrigerator car. Development of a new crate for shipping lettuce and carrots reduced losses materially, and the new crate is being widely used by

the produce industry. Tests showed that certain modifications within refrigerated motortrucks would eliminate undersirable temperature changes.

Periodic reports on the availability, prices, and consumer purchases of fruits and fruit juices in retail stores throughout the country, inaugurated as an experiment to measure the utility of such data, proved to be a highly practical guide to the trade in widening the distribution of these products. Regions where fruit-juice concentrates were found to be in limited supply, when the first surveys were made, later showed a sharp uptrend in supply and sales.

A method for quickly measuring the bread-baking qualities of wheat was developed, and a detailed description of the method and apparatus was issued for use of the industry.

A soybean marketing study showed that producers can increase net returns on soybeans most years by storing their crops on the farm at harvest time for later sale.

At the end of the year over 23,000 retailers or their employees had been given instruction in improved methods of merchandising fresh fruits and vegetables.

Analysis of storage methods for shelled corn revealed defects in design and construction of some types of bins. A number of changes were made in Quonset-type structures and ventilation ducts were improved significantly.

(The following 10 sections cover PMA activities as they relate to specific commodities.)

COTTON AND COTTONSEED

Because of a 1950 cotton crop of only 9,900,000 running bales, the fourth smallest since 1922, the United States supply of cotton for the 1950-51 season totaled only 16,700,000 bales, or 22 percent less than a year earlier. Total disappearance of cotton—domestic consumption plus exports—approximated 14,700,000 bales in 1950-51, the largest in more than 20 years. Very strong domestic and foreign demand for reduced supplies brought cotton prices to a record high level, led to the establishment of export allocations on cotton and linters early in the season, and pointed up the need for greatly increased cotton production in 1951.

Production Programs

Cotton

After a thorough appraisal of the domestic and foreign cotton situation, the Secretary of Agriculture announced on October 3, 1950, that there would be no acreage allotments or marketing quotas on 1951-crop cotton and, at the same time, stated that a crop of at least 16,000,000 bales was needed in 1951 to meet increased domestic requirements, for exports to friendly countries, and for minimum end-of-season stocks.

It was obvious from the start that many problems would be encountered in attaining the 1951 cotton production goal of 16,000,000 bales—a crop 62 percent larger than 1950 production. The problems included, among others, the competition of alternative crops; a constantly decreasing supply of trained manpower; and shortage of

raw materials for the construction of production and processing machinery, equipment, and facilities in new producing areas.

To further the campaign for increased production, two pamphlets were prepared and distributed to other Department and State agencies; to State, county, and community committeemen; and to other agricultural leaders. In one, the facts regarding the domestic and foreign supply and demand situation and the need for greatly increased cotton production in 1951 were emphasized; in the other, the materials and facilities situation was analyzed and recommendations made that producers obtain their fertilizer and insecticide supplies early. Leaflets were also prepared in quantities sufficient for distribution through county PMA committees to each cotton grower in the United States to (1) explain the supply and demand situation and the need for increased production, (2) urge producers to arrange early for adequate supplies of good-quality planting seed, and (3) point out the necessity for early procurement of fertilizers, insecticides, and equipment. Posters were displayed in gins, county committee and cotton buyers' offices, at local banks, and elsewhere. Numerous radio scripts, press releases, and other informational materials were prepared and released in sequence at State and county levels.

Other Department and State agencies, as well as the National Cotton Council and trade and producer groups, cooperated fully in carrying out the program. At least one series of State, district, county, and community meetings was held in each State to make sure that every State and local leader and every cotton grower would be thoroughly acquainted with the importance, from the national defense standpoint, of increased cotton production in 1951.

Inadequate supplies of basic raw materials and fabricating facilities arising out of other defense activities required thorough studies of minimum requirements and justification of the applications for assistance at county, State, and national levels. Federal action to obtain minimum supplies necessary to achieve the cotton production goal was recommended only after careful appraisal of the total requirements, based on surveys of the cotton acreage indications on individual farms and in specified areas. Expansion of cotton acreage and production, particularly in the western irrigated regions, made necessary the consideration of accelerated tax amortization for numbers of gins, compresses, and warehouses.

Trade reports and other estimates available at the end of the year strongly indicated that an acreage of cotton more than sufficient under normal growing conditions for meeting the established goal of 16,000,000 bales in 1951 had been planted.

Kenaf

A planting seed and fiber purchase program for kenaf, a soft-fiber plant which produces fiber similar to jute and which may be substituted for it, was undertaken at the request of the Interdepartmental Fibers Committee of the Munitions Board and after certification by the Defense Production Administration that such a program is in the interest of national defense. Under this program, limited supplies of kenaf seed, located largely in Cuba, have been purchased and resold to producer-contractors who will plant them in the United States and Cuba in 1951 and will sell the seed and fiber from such plantings to the

CCC at stipulated prices. As a result of seed and fiber production contracts which have been consummated, on a negotiated basis, only with United States companies or individuals, about 12,500 acres of kenaf are expected to be planted in 1951 for seed and fiber, about 10,000 acres of which will be in Cuba.

Guayule

At the request of the Munitions Board, a program to procure guayule seed and seedlings was inaugurated for the purpose of producing natural rubber in the United States in 1951 in the event such action became necessary in the interest of national security. The program formulated by PMA is being operated in southwest Texas with funds provided by the General Services Administration, in accordance with a directive from the Munitions Board. Land has been leased for the seedling production program and about 50 percent of the available seed has been planted. Action on the rubber production phase of the program awaits further directives from the Defense Production Administration.

1950 Cotton Allotments and Quotas

The 1950 cotton acreage allotment and marketing quota program was carried out, because suspension of allotments and quotas, after it became evident that increased production was necessary in 1951, would have added very little to 1950 production and would have served no good purpose. About 99 percent of all cotton growers had planted within their allotment or had voluntarily adjusted the farm planted acreage to the allotment. It was necessary under applicable legislation, therefore, to provide regulations, instructions, and forms for the program; to complete measurement of the acreage planted to cotton; to identify all 1950-crop cotton produced and marketed; to collect penalties and to adjust the farm marketing excess where applicable; and to make refunds to producers who had paid excess penalties.

Price-Support and Pooling Operations

Upland Cotton

Loans were made during the 1951 fiscal year on only 8,009 bales of 1950-crop cotton, at an average loan rate of 27.90 cents per pound for Middling $\frac{7}{8}$ -inch cotton, gross weight, which represented 90 percent of the parity price of cotton as of August 1, 1950. Because the market price was much higher than the loan rate, the quantity of cotton going under loan was very small—less than 0.1 percent of the 1950 crop of 9,908,000 bales, compared with about 20 percent of the 1949 crop of 15,908,000 bales. The average price of Middling $\frac{11}{16}$ -inch cotton in the 10 designated spot markets, by months, ranged from a low of 38.06 cents in August 1950 to a high of 45.23 cents in May 1951.

Producers, during the year, redeemed 4,943 bales of 1950-crop cotton and 1,102,708 bales of 1949-crop cotton.

It was announced prior to the end of the fiscal year that loans would be available to producers on 1951-crop upland cotton at 90 percent of the parity price as of August 1, 1951.

Virtually all the 1948-crop pooled cotton on hand at the beginning of the fiscal year was sold, sales aggregating about 3,400,000 bales.

Most of the sales were made during July, August, and September 1950, and constituted the largest number of bales ever sold by the Commodity Credit Corporation in a similar length of time. The distribution of net proceeds from the sale of this cotton, over \$67,000,000, was completed during the year. Of the 84,350 bales of 1949-crop cotton pooled for producers' accounts on October 1, 1950, sales through June 30, 1951, totaled 18,735 bales.

American Egyptian Cotton

Price support was not available on 1950-crop American Egyptian cotton.

All American Egyptian cotton stocks acquired under earlier programs were disposed of during the year. These stocks consisted of 32 bales of 1947-crop, 550 bales of 1948-crop, and 626 bales of 1949-crop American Egyptian cotton.

Cottonseed

Price support was available to farmers for 1950-crop cottonseed as follows: Farm- and warehouse-storage loans at \$51 per ton, and, in areas where a purchase program might be necessary, purchases at the rate of \$47 per ton. Because of an exceedingly short crop in many areas and a relatively high demand for all cottonseed products, the price of cottonseed during the 1950 marketing season stayed well above the support level. As a result, no loans or purchases were made under the 1950 program.

It was announced prior to the end of the fiscal year that prices of 1951-crop cottonseed would be supported by means of loans, purchase agreements, and purchases of cottonseed. Under terms of the announcement, farm- and warehouse-storage loans were made available at \$65.50 per ton, basis grade (100) cottonseed, and in areas where a purchase program might be necessary, purchases were made available at \$61.50 per ton, basis grade. The support rate reflected 90 percent of the January 15, 1951, parity price of \$71 per ton for average-quality cottonseed.

Stockpiling Operations

A program was developed under which the Commodity Credit Corporation offered to purchase for the national stockpile all Amsak and Pima 32 varieties of American Egyptian cotton produced in 1951 at an average purchase rate of \$1.04 per pound for Grade No. 2, 1½-inch staple. Egyptian and Sudanese cotton was purchased abroad.

In order to safeguard the supply of extra long staple cottonseed for future planting purposes, the CCC offered to purchase and stockpile limited quantities of American Egyptian cottonseed of the Amsak and Pima 32 varieties. Purchases of such cottonseed were limited to areas suitable for the growing of such seed in Arizona, California, New Mexico, and Texas. The program provided for the purchase of all registered and certified Amsak and Pima 32 seed that might be offered, and approximately 3,000 tons of quality seed which would not quite meet the standards for registered and certified seed. Under the program, 545 tons of Pima 32 and 925 tons of Amsak select cottonseed were purchased in Arizona.

At the request of the Munitions Board, the Department announced a purchase program for 1951-crop extra long staple cottonseed, very similar to the 1950 purchase program. Any seed purchased under the program, and not used for planting in 1952, will be stockpiled for future use.

Surplus Removal Operations

Under a cotton-sales-for-export program, 1,400 bales were registered for export. Funds made available to the Secretary of Agriculture under section 32, Public Law 320, Seventy-fourth Congress, as amended, were used in making payments at the rate of 10 cents per bale until December 29, 1950. On that date, the rate was reduced to zero cents per bale, and from that date to the end of the fiscal year no cotton was registered under the program.

The program has been approved for the 1952 fiscal year.

Sales of Cotton Linters

All stocks of second-cut or chemical grade linters owned by the CCC had been sold by June 30, 1951—practically all for military use. About 10,000 bales of second-cut linters, however, had not been shipped on sales contracts and were still carried in inventory. Approximately 800 bales of first-cut linters had not been sold on June 30, 1951. During the fiscal year 1951, all sales of linters were made on terms exceptionally favorable to the CCC.

Re-Entry Cotton

Only a very small amount of American cotton was re-entered into the United States during the year. Such re-entry is permitted under Presidential Proclamation No. 2544, dated March 31, 1942.

Classing and Grading

Employees of the United States Department of Agriculture classified about 6,933,000 samples of cotton. Of this quantity more than 5,200,000 samples were classed free for farmers in cotton improvement groups organized under the Smith-Doxey Act. An additional 1,721,961 samples were classified by classers licensed under the Cotton Standards Act. Twenty-five permanent and four seasonal cotton classing offices were operated during the year.

Licensed cottonseed chemists issued 88,623 cottonseed grade certificates, evidencing the grade of more than 2,200,000 tons.

The Board of Cotton Linters Examiners issued Form A memoranda on 2,166 samples and handled more than 2,000 supervisory samples received from licensed classifiers, and representing about 170,000 bales of linters.

Price Quotation Supervision

Associated with the standardization and certification of cotton for futures contracts is the responsibility placed upon the Department of Agriculture by the Cotton Futures Act to supervise cotton price quotations in the 10 designated markets. The 10 designated markets are

Memphis, Charleston, Atlanta, Augusta, Montgomery, New Orleans, Little Rock, Dallas, Houston, and Galveston. (Atlanta replaced Savannah on December 4, 1950.)

TABLE 1.—*Volume of cotton classed (not including samples classed for supervision purposes), fiscal year 1951*

Cotton classing under or for—	Samples	Cotton classing under or for—	Samples
	<i>Number</i>		<i>Number</i>
Cotton Futures Act.....	191, 182	Grade and Staple Statistics Act.....	298, 755
Cotton Standards Act, public classing service, and miscellaneous ¹	699, 513	Total classed by employees of Cotton Branch, PMA.....	6, 932, 742
Commodity Credit Corporation.....	99, 028	Reported classed by li- censed classers under Cotton Standards Act ¹ ..	1, 721, 961
Economic Cooperation Administration.....	405, 222		
Federal Penitentiary, Atlanta, Ga.....	23, 636		
Smith-Doxey Act (act of Apr. 13, 1937) ²	5, 215, 406		

¹ Includes accommodation classing for governmental agencies and others.

² Classification under this act is acceptable as a basis for Commodity Credit Corporation loans.

Market Reports

Under authority of the Smith-Doxey Act, market news was made available to 507,873 members of organized cotton improvement groups. Numerous reports were issued on cotton quality including a report on the grade and staple length of cotton in the carry-over as of August 1, 1950; a report on the quality of the 1949 crop showing the various quality factors by districts, States, and by ginning periods; and, for the 1950 crop, periodic reports on cotton quality by ginning periods, district, States, and for the United States.

Weekly reports on cotton market news were issued regularly from Washington, Atlanta, Memphis, Dallas, and Bakersfield, and on the quality of cottonseed and prices for cottonseed from Atlanta, Memphis, and Dallas. Weekly market news reports designed generally for the use of farmers in marketing their cotton were issued from Atlanta, Memphis, and Dallas during the regular marketing season. Weekly market reports on cotton linters were issued from Washington. The report entitled "Cotton Price Statistics" was issued monthly from Washington.

Standardization and Testing Activities (Including Research)

At the 1950 Universal Standards Conference it was indicated that a survey of the 1950 cotton crop would be made with special reference to standardization. This survey, completed during the fiscal year 1951, indicated a need for revision in the standards for both upland and American Egyptian cotton.

A proposed new set of standards for American Egyptian cotton was prepared and presented to producer, merchant, and mill groups throughout the Cotton Belt for suggestions. On June 25, 1951, in a

conference with representatives of these groups, the new standards were unanimously approved and early promulgation was expected as the fiscal year ended.

Proposed new standards for grade of upland cotton were prepared. It is hoped that by the spring of 1952 it will be possible to call a Universal Cotton Standards Conference for revision of the standards. It is also hoped that the new standards will be ready for recommendation for promulgation by the Secretary of Agriculture in August 1952, to become effective August 1953.

The samples assembled in connection with the survey of the 1950 crop were measured for color and analyzed for foreign-material content. Results were used in the preparation of the proposed new standards for both American Egyptian and upland cotton.

Laboratory fiber tests were made on all bales of cotton considered for use in the physical forms of the staple-length standards. About a fourth of the bales tested for this use were rejected because they failed to meet specifications for specific staple lengths represented in the official standards. Official types returned or questioned by the cotton trade were limited to 8 out of approximately 12,000 distributed to the cotton trade. Of these, 5 proved to be incorrect on the basis of laboratory tests.

Research on the effect of atmospheric conditions and length of storage on color of cotton was continued. A preliminary report on this work was published in January 1951 under the title "Effect of Exposure and Storage on Color and Other Factors of Quality in Raw Cotton."

Although standard specifications for artificial daylighting of the filtered tungsten type had been developed on the basis of earlier studies, less expensive installations of a combination of fluorescent and tungsten lights have been developed recently and are now being used extensively in cotton classification facilities. New studies undertaken during the year were designed to develop standard specifications for installations of this type. Tentative specifications were prepared and are being used for installations in classing facilities of the Department as well as of private cotton firms.

An electronic instrument for measuring the color of cotton samples automatically was improved. This instrument is now being used extensively in Department standardization activities and by cotton merchants and textile mills.

Among the principal accomplishments in fiber and spinning testing were the development of an improved scale for measuring the fineness of cotton fibers by the air-flow method and a mechanical fiber blender for use in preparing test specimens for fiber laboratory tests.

The scale is based on a curvilinear relationship between the weight per unit length of cotton fibers and the resistance to the passage of air through a sample of cotton of fixed weight and volume. A report on the new scale was published by PMA in October 1950 under the title "Revised Micronaire Fineness Scale for Use in Testing American Upland Cotton." Work was also initiated on the development of a similar scale for use in the testing of American Egyptian cottons.

The machine for the mechanical blending of fiber samples, after thorough tests, has been adopted as standard equipment for each of the five cotton laboratories operated by PMA. The mechanical

blender reduces the time required for the preparation of fiber test specimens to about a tenth of that required by the former manual method and does a better job of blending than can be accomplished by the manual method.

Statistical analyses of data on fiber properties and processing performance of cotton tested in PMA laboratories are providing basic information on the relative importance and specific contributions of each of the various factors of raw-cotton quality to performance of cotton in textile processing and to the quality of manufactured cotton products. Three progress reports on the results of these studies have been published by PMA during the year.

Laboratory facilities for the evaluation of various factors of cotton quality were operated at five locations, as follows: Washington, D. C.; Clemson, S. C.; Stoneville, Miss.; College Station, Tex.; and Mesilla Park, N. Mex. These facilities, used primarily in connection with standardization and other research activities of PMA, have also been made available to other Federal and State research agencies on a cooperative basis, and to the various branches of the cotton industry on a fee basis under the provisions of the Cotton Testing Service Act of 1941. A total of 100,436 tests were made, compared with 93,185 tests in the fiscal year 1950. Of this total, 40,663 tests were made on a fee basis, as compared with 38,637 in the fiscal year 1950.

A Belt-wide study of the standard system of grading cottonseed as applied to oil-mill purchases of seed, was completed. This study covered a period of 5 years and included an analysis of the relation of the grade to actual milling outturn of cottonseed products. On the basis of the findings of the study, recommendations were made for slight adjustments in the standard grading system to increase the accuracy with which the grades reflect milling outturn. A report of the results of the study was published in May 1951 under the title "The Grading of Cottonseed," AIB 39.

Substantial progress was made on the development of an electronic meter for the rapid determination of the oil content of cottonseed. This work, a part of which is being performed under contract, is being conducted under authority of the Research and Marketing Act of 1946.

Cotton Marketing and Ginning Research

Work was continued to improve equipment for the automatic mechanical sampling of cotton bales during the ginning process. A complete unit of this equipment was installed in a commercial gin in New Mexico, where it was operated satisfactorily during the 1950-51 ginning season. The sampling of bales ginned at the cooperating gin was limited to the samples obtained by the automatic mechanical cotton sampler, and the cotton was marketed on the basis of those samples. The cooperating gin has requested the continuation of the use of the equipment during the next ginning season. A unit of the equipment will also be installed in a commercial gin in the Mississippi Delta for operation during the 1951-52 ginning season. Two reports on this device available for distribution are "The Sampling of Cotton Bales as Related to Marketing" and "Automatic Mechanical Equipment for Sampling Cotton Bales during Ginning."

Data with respect to costs to producers for ginning and packaging cotton and for services incident to the marketing of cotton during the 1950-51 cotton season were assembled on a Belt-wide basis. The study indicates that cotton growers paid an average charge of \$11.19 for ginning and wrapping a 500-pound gross weight bale of upland cotton during the 1950-51 season—an increase of 72 cents per bale from the charge for the previous season. Charges paid by growers for ginning American Egyptian cotton on roller gins averages \$21.06 per 500-pound gross weight bale for the 1950-51 season, as compared with \$18.20 the previous season. Average charges for receiving and storing cotton at warehouses advanced only slightly during the 1950-51 cotton season as compared with the previous year. Detailed data assembled in connection with these studies were published in April 1951 under the title "Charges for Cotton Ginning and Marketing Services and Related Data, Season 1950-51."

Studies of the fiber characteristics and spinning quality of cotton produced annually by cotton improvement groups were continued in 109 areas throughout the Cotton Belt. Complete fiber and spinning tests were made on samples representing early, midseason, and late harvested cotton in each of these areas. All the varieties and strains of cotton now being produced on a sufficient scale and degree of standardization of production were included in the study. Reports published at approximately 1-month intervals throughout the ginning season, with a summary at the end of the season, have provided information with respect to laboratory measurements of fiber length, length uniformity, tensile strength, fiber fineness and maturity, as well as grade and staple length, performance in processing, and quality of yarn produced.

One Research and Marketing Act study was concentrated primarily on qualities of cotton required and available market outlets for cotton in thread, tire cord, knit goods, insulating yarn, towels, draperies, chambray, gingham, uniform twill, army sateen, yarn for balloon cloth and airplane fabrics, and organdy, voile, and other fine fabrics. Two reports were published—"Market Outlets for Extra Long Staple Cotton in the United States" (AIB 33) and "Market Outlets for Cotton in Knit Goods." During the latter part of the year emphasis was placed primarily on the determination of qualities of cotton required for the manufacture of the more important products being manufactured in connection with the national defense program.

Studies of the price structure and the adequacy of the market news information for cottonseed were continued and expanded. Particular attention was given to the development of information concerning the relationship of prices paid by ginners to the quality of seed purchased, spreads between price of seed received by producers and price paid by cottonseed oil mills, and the adequacy of currently available market quotations on cottonseed prices.

Research on technical problems of ginning cotton have been conducted in cooperation with Agricultural Research Administration. Three series of tests, including a total of 500 lots of seed cotton and representing a wide range of conditions, were conducted during the year as a basis for developing information with respect to the optimum moisture content of cotton for various gin processes.

A reciprocating cleaning and moting device, which has been developed at the U. S. Ginning Laboratory for incorporating in conventional gin stands, was subjected to extensive laboratory testing. The tests indicate that the "reciprocleaner" removed approximately 50 percent more motes and foreign material than were removed by gin stands operating without the device. Fiber and spinning tests failed to disclose any fiber damage from the use of this equipment. Some of the major gin-equipment manufacturers are planning to incorporate similar designs in their new-model gin stands.

A study to evaluate the costs and quality of ginning services being performed by gins operating in the Piedmont area of Georgia was initiated in cooperation with the Georgia Agricultural Experiment Station. A similar study, conducted in cooperation with the Department of Agricultural Economics of Louisiana State University, was completed and the results prepared for publication. A study of the same type was continued in the Rio Grande and Pecos areas of New Mexico and west Texas.

A Research and Marketing Act contract project for research on new principles and techniques for cleaning seed cotton was completed. The aerodynamic principles, which appeared to have some promise, were incorporated in pilot-scale models which were subjected to practical tests. These tests, however, indicated that, because of excessive power requirements and other technical problems, this method of cleaning seed cotton does not appear to have practical possibilities.

Other Research and Marketing Act projects were continued on the development of equipment and methods for the drying of cottonseed at gins and on special problems of ginning under conditions prevailing in the low-humidity areas of the western cotton-producing States.

DAIRY PRODUCTS

Although the production of milk during the fiscal year 1951 was 119,806,000,000 pounds, only slightly less than the 120,433,000,000 pounds produced in the fiscal year 1950, prices received by farmers for milk averaged 21 percent higher in June 1951 than in June 1950, while the butterfat prices averaged 17 percent higher. A strengthening in domestic civilian demand was the important cause of the increase in prices received by dairy farmers. With higher prices, there was a material falling off in support activity. Butter purchases were 31,000,000 pounds as compared with 203,000,000 pounds a year earlier; cheese 30,000,000, pounds, as compared with 78,000,000 pounds a year earlier; and nonfat dry milk solids 107,000,000 pounds, as compared with 458,000,000 pounds a year earlier.

Price Support

A new price-support program became effective January 1, 1950, and continued through March 31, 1951, the end of the marketing year. Under this program, the Department supported prices to producers for manufacturing milk and butterfat at national average prices of approximately \$3.07 per hundred pounds for manufacturing milk of 3.95 percent butterfat (yearly average test) and approximately 60 cents per pound of butterfat, in accordance with the Agricultural Act of 1949.

The level of support was increased for the marketing year beginning April 1, 1951, to help counteract forces which were becoming unfavorable to milk production, and to encourage production to meet civilian and defense requirements. The announced support prices under this program were \$3.60 per hundred pounds of manufacturing milk and 67.6 cents per pound of butterfat. These prices were equal to 87 percent of the parity equivalent price for manufacturing milk and 90 percent of parity for butterfat at the time the program was announced. In carrying out the program for the 1951-52 marketing year, the Department offered to make carlot purchases of dairy products in the United States at the following prices:

Product:	Price (cents per pound)
Butter, U. S. Grade A or higher-----	66
Butter, U. S. Grade B-----	64
Cheddar cheese, U. S. Grade A or higher-----	36
Nonfat dry milk solids, spray process, U. S. Extra Grade-----	15
Nonfat dry milk solids, roller process, U. S. Extra Grade-----	13

The market outlook for dairy products changed materially during the year as a result of economic developments following the Korean outbreak. At the beginning of the year, prices were near the support level and Government holdings of butter, cheese, and nonfat dry milk solids were a major problem. The post-Korean increase in demand strengthened dairy prices during the fall of 1950. As a result, the Department sold substantial quantities of butter, cheese, and nonfat dry milk solids in domestic trade outlets during the year, and disposed of additional quantities through export sales and donations to school lunch programs and welfare agencies for needy persons in accordance with section 416 of the Agricultural Act of 1949. By the end of the year all stocks of butter and cheese and most all of the stocks of dried milk acquired under the 1949 and 1950-51 price-support programs had been disposed of. Purchases after April 1 under the 1951-52 program were small, and most of the quantities purchased, principally nonfat dry milk solids, were on hand at the end of the year.

Marketing Agreements and Orders

The number of Federal orders regulating the handling of milk increased during the fiscal year from 37 to 41. The four new orders that were issued cover the following marketing areas: Memphis, Tenn.; Milwaukee, Wis.; Springfield, Mo.; and Puget Sound, Wash. An order also was issued for the Muskogee, Okla., marketing area to become effective on July 1, 1951. A consolidation of the Chicago and Suburban Chicago order is also to be effective July 1. Approximately 156,000 producers, delivering about 19,149,000,000 pounds of milk valued at about 800,000,000 dollars, were directly affected by the orders during the year.

Marketing areas for which promulgation hearings had been held and for which Federal order proceedings were in process include: Detroit, Mich.; north Texas; Wichita Falls, Tex.; Cedar Rapids, Iowa; Neosho Valley (Kansas and Missouri); and western Michigan. Notice had been issued of a promulgation hearing to commence in Providence, R. I., on June 25. Petitions for hearings on proposed orders were received from 7 other milk marketing areas not presently

under Federal regulation, and 12 additional new markets made inquiry concerning Federal order programs.

New markets petitioning for hearings during the year include: Central west Texas; Bogalusa, La.; San Antonio, Tex.; Sioux Falls, S. Dak.; Canton-Massillon-Alliance, Ohio; Fort Smith-Van Buren-Camp Chaffee, Ark.; and Kay County, Okla.

Forty-two public hearings were held to receive testimony relative to new orders or amendments to existing orders. Thirty-two amending orders that were issued resulted from hearings held this year or earlier.

Three orders were issued to suspend certain provisions of existing orders.

Four public meetings were held during the year pursuant to requirements set forth in the Administrative Procedure Act. Two of these meetings concerned proposed market administrator rules and regulations, one concerned a proposed suspension order, and one concerned the setting of an equivalent cream price for use in connection with certain orders. On three occasions amendments to market administrators' rules and regulations were issued.

Seven petitions were filed by handlers for review of order provisions or market administrators' regulations under section 15 (A) of the act, and 10 decisions or dismissals concerning petitions filed during the past year or prior thereto were issued by the judicial officer of the United States Department of Agriculture. On May 31, 1951, action was pending on 29 petitions.

Four handlers filed action in United States courts to appeal 15 (A) decisions issued by the judicial officer and one handler brought suit against an individual as market administrator and as referendum agent to restrain him from counting the votes in a referendum. The Government brought action against seven handlers to enforce order provisions. Action was completed on 15 cases commenced during the past or prior years.

Decisions were handed down in the following important cases:

Babylon Milk and Cream Co. v. Brannan. C 10342, New York Order. On September 19, 1950, judgment was entered in the District Court upholding the judicial officer's ruling, which in turn upheld the validity of the compensatory payment provision of the New York order.

Stark v. Brannan. C. 10365 and 10366, Boston Order. On November 9, 1950, the United States Court of Appeals for the District of Columbia ruled that the cooperative payment provision was beyond the authority of the statute and affirmed the previous decision of the District Court in this case.

DeCoursey Cream Co., Inc., v. Brannan. C. W-87, Wichita Order. On December 15, 1950, the United States District Court for the District of Kansas handed down an opinion adverse to the Government in this case. The issue involved was whether the handler was obligated to account for producer milk as class I, for which producers receive credit under the allocation provisions, notwithstanding the assertion of the handler that uninspected (and unpriced) milk was actually used in certain out-of-market class I sales.

Crystal Lake Dairy Co. v. Brannan. 50 C 275, Chicago Order. On February 20, 1951, the United States District Court for the Northern District of Illinois handed down a decision ruling that the plaintiff

did not have justiciable interest in the action, that the special price provision of the order effective for the month of November 1947 was adequately supported by evidence in the record, and that ample notice was given of the amendment hearing. On February 21, 1951, the order was entered dismissing the case.

U. S. v. Fred Twietmeyer, d. b. a. Homewood Farms Dairy. C. 49 C. 801, Chicago Order. On May 21, 1951, final judgment was issued in this case involving obligations imposed on the handler for underpayments to producers based upon evidence of falsification of weight records observed to have been with respect to deliveries on not less than 5 days in each month of a 5-month period in 1948. The handler was ordered to make all payments due under the order by July 1, 1951. Final judgment was entered May 31, 1951.

Agricultural Supply Program

PMA participated in the development of programs for the procurement of dairy products for export to European countries under financial aid received from the Economic Cooperation Administration. A total of 694,500 cases of evaporated milk and 2,186,000 pounds of Cheddar cheese were purchased during the fiscal year ending June 30, 1951, for shipment to Greece. Small quantities of dried whole milk and sweetened condensed milk were also purchased under ECA financing for shipment to Indochina. Requirements of other dairy products from the United States under these programs were made available from price-support stocks rather than from direct purchases.

School Lunch and Other Distribution

The Department made available from CCC price-support stocks for distribution to school lunch programs and to welfare agencies assisting needy persons in the United States and abroad (under authority of sec. 416 of the Agricultural Act of 1949), approximately 68,000,000 pounds of butter, 25,000,000 pounds of cheese, and 126,000,000 pounds of nonfat dry milk solids. These supplies were donated free of charge at warehouse location of stocks largely during the period from July through December 1950. In December 1950, donations of butter and cheese under this program were discontinued because of the strong commercial demand which had developed for remaining CCC stocks of these commodities. Donations of nonfat dry milk solids for the relief of needy persons abroad were discontinued in January 1951. The Department also purchased almost 7,000,000 pounds of processed American cheese for distribution primarily to school lunch programs.

Foreign-Assistance Programming

PMA assembled and analyzed information on current and prospective supplies and price conditions for the various dairy products for use in ECA programs. During the year approximately \$7,000,000 was authorized by ECA for the procurement of dairy products originating in the United States. In addition, nearly \$2,000,000 was made available by the Department of State for shipment of dried milk to

Yugoslavia. In accordance with the provisions of the Foreign Assistance Act of 1948, recommendations were developed regarding determinations required by the Secretary of Agriculture concerning surplus agricultural commodities and the use of ECA funds for the procurement of dairy products in countries other than the United States.

Market News

The dairy and poultry market news service showed continued growth during the year. The broiler reporting service was improved, the service at the Chicago terminal market was broadened, and the over-all field office supervision was strengthened. A full-time dairy and poultry market news service was established at Pittsburgh under a new cooperative agreement with the Pennsylvania Department of Agriculture. Local services at all field offices were improved, and in some cases expanded to include additional commodities. The dissemination of market news was increased through all outlets. A survey made of the market pages of daily newspapers throughout the country indicated that approximately 75 percent are carrying dairy and poultry market news. The field organization of the service at the end of the year included 32 offices in terminal markets or producing areas, three-fourths of which, in 16 States, were operating under Federal-State agreements.

Under the original cooperative arrangement with the States of Maryland, Delaware, and Virginia, State personnel in Maryland and Delaware assembled on a part-time basis price information on broiler chickens from poultry processors and other buyers in the "DelMarVa" area. It was possible during the year to put into effect a revised cooperative agreement, under which a full-time reporter was placed in charge of the DelMarVa work. Under the revised agreement, leased wire service was installed at Salisbury, Md., where, by mutual agreement, the centralized office is now located. Broiler reports in other areas were also improved through broadening local coverage and assembling additional information, principally as to volume of marketings. The possibility of reporting prices paid producers who make deliveries to processing plants, as well as prices paid at the farm, is being explored in those areas where only one price is now being assembled.

A new cooperative agreement with the Pennsylvania State Department of Agriculture was signed during the year, providing for a full-time market reporter to cover dairy and poultry products in that market. The new Pittsburgh arrangement became effective April 1, 1951. The Pennsylvania agreement was drawn up to include the Philadelphia office also under the Federal-State program.

The few problems that have arisen in markets operating under cooperative agreements have been due principally to the difficulty of coordinating objectives and procedure. Rapid transportation facilities have placed areas which are far apart in competition with each other, and the need for providing market news on a uniform basis is obvious. New projects in several States, which have been financed by Research and Marketing Act funds, should provide background material if and when new market news services should be later developed in these States.

Standardization

The increased demand for high-quality dairy products has continued to develop interest in the dairy industry in grading and quality-improvement work. Emphasis on the development of quality standards for grades of milk and milk products has, therefore, been continued during the year. In this connection, the following activities were undertaken.

U. S. Standards for grades of Cheddar cheese were promulgated.

U. S. Department of Agriculture scorched-particle standards for dry milks were promulgated.

A revision of the Tentative U. S. Standards for grades of milk for use in the manufacture of dairy products, based upon comments received from representatives of State colleges, State departments of agriculture, industry, and trade organizations was published in the Federal Register as a proposed rule making, to establish U. S. Standards for grades of milk for use in the manufacture of dairy products. The time for submitting written data, views, or arguments for consideration in connection with these proposed standards expired June 30, 1951.

A revision of the preliminary draft of Tentative U. S. Standards for grades of cream for use in the manufacture of butter, based upon comments received from representatives of State colleges, State departments of agriculture, industry, and trade organizations, was published in the Federal Register as a proposed rule making, to establish U. S. Standards for grades of cream for use in the manufacture of butter. The time for submitting written data, views, or arguments for consideration in connection with these proposed standards expired June 30, 1951.

A new, more accurate, and quicker method for determining scorched particles in roller-process nonfat dry milk solids through disk filtration by using a pepsin-hydrochloric acid solution was described in the Journal of Dairy Science as well as in mimeographed reports for use by the dairy industry. The method necessitated holding the sample 20 minutes in a 45° C. water bath and bringing the sample to a boil prior to filtering. It was recognized, therefore, that a more rapid method of filtration was needed. More rapid filtration was achieved by the use of a hot sodium citrate solution. The practicability and reproducibility of the method were determined by a cooperative project conducted by members of the Standards Section, the Dairy Branch Laboratory at Chicago, Ill., and the Veterinary Section, Army Medical Laboratory, Army Medical Center, Washington, D. C. This improvement also will be described in the Journal of Dairy Science and in mimeographed reports to the dairy industry.

U. S. Standards for grades of nonfat dry milk solids have been published in the Federal Register and will become effective July 8, 1951. These standards are a revision of that part of Tentative U. S. Standards for grades of dried skim milk and dried whole milk relating to dried skim milk.

Information is being assembled for use in revising the tentative U. S. Standards for dried whole milk.

The results of regrading 25,000,000 pounds of Cheddar cheese purchased in 1949 and 180,000,000 pounds purchased in 1950 were tabu-

lated and summarized. A report showing the percentage of Cheddar cheese that decreased in grade during storage and the cause for the decrease was prepared and distributed to members of the industry and other interested parties. This report will be used in connection with a study of possible changes in the standards for Cheddar cheese, intended to improve them for use in selecting Cheddar cheese for storage purposes.

The results of regrading 98,000,000 pounds of butter purchased in 1949 and 128,000,000 pounds purchased in 1950 also were tabulated and summarized. This summary shows the percentage of butter that decreased in grade during storage and the cause for the decrease. The information, which was distributed to members of the dairy industry and other interested parties, will be used in revising present butter grades.

Information is being assembled to show whether or not present tentative U. S. Standards for grades of Swiss cheese should be revised.

Literature reporting technical research and other information relating to the quality of butter oil was reviewed preparatory to establishing standards for this product.

The use of uniform standards for classification of dairy products was demonstrated and promoted through the Collegiate Students' International Contest in Judging Dairy Products. Judging teams, comprised of 3 members and an alternate from 26 colleges, participated in this contest, and much valuable information was disseminated regarding the importance of quality in dairy products. Rules for the 1951 contest were forwarded to all agricultural colleges.

Assistance was given in the preparation of Federal specifications for (1) cheese, processed, canned; (2) cheese, Cheddar; (3) milk, sweetened, condensed; (4) cheese, Cheddar, processed; and (5) cream and half-and-half, fresh.

Assistance was given in the preparation of military specifications for (1) cheese, processed, canned; (2) milk, concentrated, refrigerated; (3) milk, dry, modified, sweetened; (4) milk, pasteurized, reconstituted, blended, standardized; (5) buttermilk solids, cultured, dry; and (6) milk, dry, whole.

In cooperation with representatives of the Veterinary Division of the Army Medical Center, work was completed showing that commercial chocolate drink can be stored at -17.8° C. (0° F.) for 380 days without flavor deterioration or protein flocculation. Work has also been completed showing the effect of the addition of sugar with and without ascorbic acid on the keeping quality of frozen homogenized milk.

Inspection and Grading

Grading and inspection showed some decline over last year as a result primarily of the discontinuance of price-support activities for poultry products. These declines were partially offset, however, by continued price-support activity on some dairy products, as well as expanded commercial activities based on requests for poultry grading and inspection because of recently promulgated regulations.

The scope of inspection and grading activities is reflected in table 2.

TABLE 2.—*Comparative inspections and/or gradings of dairy and poultry products, fiscal years 1950 and 1951*

Commodity	Unit	Inspections in fiscal year—	
		1950	1951 ¹
Butter-----	Pound----	601, 088, 981	572, 296, 344
Cheese-----	do-----	207, 334, 338	272, 939, 407
Dry milk-----	do-----	842, 456, 340	667, 078, 750
Evaporated milk-----	Case-----	1, 406, 315	1, 024, 375
Eggs-----	do-----	14, 272, 824	14, 776, 822
Frozen eggs-----	Pound----	21, 264, 092	19, 014, 392
Dried eggs-----	do-----	209, 309, 924	248, 703, 230
Processed eggs-----	do-----	566, 595, 831	376, 831, 768
Poultry (shipping point and terminal market).-----	do-----	261, 715, 386	488, 840, 564
Dressed poultry (inspected for condition and wholesomeness).-----	do-----	393, 304, 761	561, 604, 156
Live poultry-----	do-----	3, 314, 261	3, 338, 164
Turkeys (dressed)-----	do-----	243, 302, 054	(²)

¹ Partly estimated.² Turkeys included with poultry (shipping point and terminal market).

Activities Under the Research and Marketing Act

A report of a study of the problems in securing milk from emergency sources, as compared with securing it from regular local producers, was published during the year. It dealt with the Philadelphia market. The characteristics of the regular milk supply were analyzed in comparison with wartime emergency sources with respect to quality, price, seasonality, and other factors. The results provide a factual basis by which members of the industry can judge advantages and disadvantages of alternate procurement arrangements.

A report of a similar study dealing with milk supply problems in the St. Louis market was published during the year. The St. Louis study examined a long-term decline in the number of regular producers and in the total quantity of milk which they were able to supply the market. The changing sources of supply were examined as to the effect of changes in health regulations and enforcement policies of the Health Department, and the effect of pricing and pooling provisions of the Federal milk marketing order.

Progress has been made during the year on historical studies of milk marketing under Federal regulation in five marketing areas: Duluth-Superior, Minneapolis-St. Paul, Louisville, Clinton, and Kansas City. These studies provide appraisals of order operation in the markets concerned, and, as a series, will facilitate comparisons of specific marketing problems, such as pricing, classification, and pooling procedures, under varied conditions.

A publication on Sanitary Milk and Ice Cream Legislation in the United States was issued by the National Research Council during the year under the contract with the United States Department of Agriculture for a study of the effect of regulatory measures upon the quality of milk. The bulletin presents in tabular form the sanitary

requirements for milk in 48 States and 84 cities. An intensive study of the physical, chemical, and bacteriological characteristics of milk, and of the sanitary regulations and enforcement facilities and practices in eight cities was nearly completed.

A study of the yield of milk powder from a unit quantity of milk was completed in its field work phase, and the data are being analyzed. Basic data on the relationship of fat content to nonfat solids content of milk were obtained in such a way as to indicate some of the factors affecting the relationship.

Central market prices for butter received further study during the year, with reference to the levels and stability of prices. Work was begun on a phase of this project in which an effort will be made to define the marketing channels and practices relating to that butter which forms the basis for the market quotations.

Analysis of margins in distributing milk and milk products in the Duluth-Superior market was continued, with computations of the cost of milk to dealers, and the effect of quantity discounts receiving special attention.

Changes in fluid milk and milk products sales in Federal order markets were studied and published regularly during the year. At the close of the year, an analysis of trends in sales of fluid whole milk relative to sales of fluid skim milk products was under way.

FATS AND OILS

Production of peanuts approximated 2,000,000,000 pounds in 1950—about equal to the 1940-49 average. Price support, mandatory under existing Federal legislation, was extended on 1,284,000,000 pounds, farmers' stock basis. Tung nut production dropped from 87,900 tons in 1949 to 38,750 tons in 1950, and, although price support is mandatory for tung nuts, the demand-price situation was such as to make support operations unnecessary for the 1950 crop. A program to increase domestic production of castor oil was initiated during the year, and Defense Food Order No. 1 was made effective to control inventories and the use of this commodity.

Price Support

Peanuts

Support prices, based on 90 percent of the parity price as of August 1, 1950, were established for 1950-crop peanuts as follows: Virginia type containing 65 percent sound mature kernels, \$207 per ton; runner type, containing 65 percent sound mature kernels, \$190; and Spanish and Valencia types containing 70 percent sound mature kernels, \$214 per ton east of the Mississippi River, and \$209 per ton west of it. Premiums and discounts were established for the other grades.

The price-support program was implemented by purchases from producers through receiving agencies, producer loans, and sheller contracts with CCC. Under the contract, the sheller agreed to pay all producers not less than the applicable support price for eligible farmers' stock peanuts. CCC agreed to purchase from the sheller any eligible farmers' stock peanuts offered by eligible shellers during the period August 1, 1950, to April 30, 1951, at the support prices, based on grades and weights.

For several years prior to 1950, CCC purchased unlimited quantities of No. 2 shelled peanuts from shellers participating in the program. Under the 1950 program, however, limitations were placed on the quantity of No. 2 peanuts which CCC could purchase from any sheller, depending on the quantity sold for edible use. At the beginning of the program, CCC purchased the following quantities for every 1,000 pounds of the particular type which the sheller sold for edible use: Southeastern Spanish, 200 pounds; Southwestern Spanish, 400 pounds, runner type, 450 pounds; Virginia and Valencia types, 325 pounds each. Later in the season, the quantities which could be sold to CCC were increased to 250 pounds of Southeastern Spanish for each 1,000 pounds sold for edible use and 600 pounds of runner type. The limitation was further increased to permit shellers to deliver 850 pounds runner type and 500 pounds of Southeastern and Southwestern Spanish type No. 2 shelled peanuts for each ton of eligible farmers' stock peanuts of such respective types which the sheller certified that he purchased and did not dispose of as farmers' stock. On and after April 16, 1951, the limitations for Spanish and runner types were removed by CCC. These limitations were increased and finally removed because, as the shelling season progressed, the crop estimate increased and consequently it was found that the surplus of edible peanuts exceeded earlier estimates.

No producer loans were requested. However, loans were made to shellers through lending agencies, secured by the shellers' inventories, for the purpose of financing purchases of farmers' stock peanuts.

Purchases of farmers' stock peanuts of the 1950 crop amounted to 97,629 tons, of which 63,015 tons were sold for edible purposes and 34,614 tons for crushing. Approximately 190,202 tons of No. 2 shelled and oilstock peanuts were purchased, of which 169,758 tons were sold for domestic crushing, and approximately 20,444 tons were sold for export crushing.

Under Public Law 471, producers who picked and threshed peanuts in excess of their 1950 acreage allotments were permitted to deliver excess peanuts to agencies designated by CCC at oil and meal value, provided such producers did not pick and thresh in excess of their 1947 "picked and threshed" acreage. Purchases of excess-oil peanuts were made through shellers and receiving agencies. Producers were paid the oil and meal value, as determined and announced periodically by CCC during the marketing season. Excess oil peanuts were sold for crushing by CCC at their oil and meal value. Public Law 471 further provides that the Secretary of Agriculture may declare any type of peanuts in short supply and prorate among the producers the profits from sales for edible use. Virginia and Valencia types were declared in short supply and sold for edible purposes at 105 percent of the support price plus carrying costs. Approximately 12,934 tons of Virginia type and approximately 198 tons of Valencia type were sold by CCC.

The program for 1951-crop peanuts, approved May 4, 1951, provides for supporting prices to cooperating producers by means of nonrecourse farm-storage loans, and purchases of farmers' stock peanuts through receiving agencies and shellers under contract with

CCC. Shellers and receiving agencies are designated as agents of CCC to purchase excess oil peanuts.

The minimum average support price for the 1951 crop was announced at \$230.56 per ton for peanuts of all types, on the basis of 88 percent of the parity price of \$262 per ton as of April 15, 1951. Support prices are subject to upward revision if the supply position or a higher level of parity as of August 1, 1951, the beginning of the marketing year, requires a higher support level. Base grade support prices were announced as follows:

Type:	Per ton (dollars)
Virginia and Valencia.....	226
Runner	206
Southeast Spanish	229
Southwest Spanish	225

The program for 1951 does not provide for delivery to CCC of No. 2 shelled peanuts. But provision is made for delivering excess oil peanuts in shelled form. Eligibility requirements as to the quality of farmers' stock peanuts are more stringent than in preceding years.

Tung Nuts

During November 1950, CCC acquired 1,568,340 pounds of tung oil from producers who had signed purchase agreements under the 1949 program at the support price of 24.1 cents per pound. At the request of the Munitions Board that CCC retain its current stocks of tung oil, this oil was sold by CCC to the Secretary of Agriculture on June 1, 1951, for future emergency use. The Secretary, using funds authorized under the Defense Production Act, purchased the oil from CCC at the prevailing market price of 39.75 cents per pound. CCC will continue the inventory management until the oil is sold at the direction of the Secretary.

The program for 1950 provided for supporting the price of tung nuts and tung oil by means of purchase agreements on tung nuts and oil and nonrecourse producers' loans on tung oil stored in approved warehouses. The support price was \$63 per ton for tung nuts based on 60 percent of parity as of November 1, 1950, and 25.1 cents per pound for oil. With Chinese tung oil embargoed, the domestic price of tung oil increased to above 40 cents per pound in late December 1950. Because of the high price, producers sold their 1950-crop oil commercially.

Linseed Oil

Under authority of the Defense Production Act, CCC transferred to the Secretary of Agriculture on June 21, 1951, 300,000,000 pounds of linseed oil from its inventory of approximately 520,000,000 pounds which it acquired under 1948 and 1949 price-support operations. The cost to CCC at the time of the sale averaged 28.4 cents per pound. The sales price, at prevailing market value, was 18.07 cents per pound, thus resulting in a loss to CCC under price-support operations of approximately \$31,000,000. CCC will continue the inventory management of the oil for the account of the Secretary until sold at his direction for use in the defense program.

During the fiscal year 1951 CCC sold 823,400 bushels of flaxseed to domestic crushers and purchased 16,620,000 pounds of resultant

linseed oil. These transactions were made to convert flaxseed acquired under the 1948 and 1949 price-support programs to a more storable form and to make linseed cake and meal available for current use.

Sales of linseed oil by CCC for domestic use and for export, excluding transfer to the Secretary, amounted to approximately 57,000,000 pounds during the fiscal year.

Cottonseed Oil

In the first half of fiscal year 1951, the CCC sold 79,500,000 pounds of crude and refined cottonseed oil acquired from toll crushing of cottonseed purchased in the 1949 price-support program.

Peanut Marketing Quotas

In October 1950, a national allotment of 1,771,117 acres was announced for 1951-crop peanuts. But Public Law 17, Eighty-second Congress, authorized the Secretary of Agriculture to increase the allotments for States whose production of a type of peanut is insufficient to meet demands for cleaning and shelling. Under this statute, increases in allotments for States growing Virginia and Valencia types of peanuts were granted in the amount of 83,266 acres. The law also changed the method of apportioning the national allotment to States, and this brought about an increase to producers of other types of peanuts of 34,900 acres. Altogether, Public Law 17 increased the allotment by 118,166 acres, thus making a total of 1,889,283 acres for 1951-crop peanuts.

The law also permits owners and operators to relinquish all or part of the allotments for their farms, the allotments so released to be made available to other farms in the same county. Farmers who did not grow peanuts in 1947 are now permitted to pick and thresh a total acreage of peanuts equal to that in 1948 and to deliver excess peanuts to a designated agency and thus avoid payment of penalty. Designated agencies pay the equivalent of the prevailing market value of peanut oil and meal, less certain specified charges. A method for re-establishing allotments for farms of persons whose land is acquired by the Federal or State Government is also provided under Public Law 17.

Export Operations

Domestic procurement of fats and oils was based upon requirements of ECA and other Government agencies. These requirements were filled from inventories acquired under the price-support program or by direct purchases.

Purchases included approximately 30,000,000 pounds of crude and processed soybean oil and approximately 3,500,000 pounds of yellow grease and inedible tallow. Under section 112 (e) and (f) of the Foreign Assistance Act of 1948, about 41,000,000 pounds of peanuts and 16,000,000 pounds of linseed oil were shipped to ECA countries.

The total value of commodities procured during the year for supply purposes (excluding seed and equipment for the castor-bean program, discussed below) amounted to approximately \$7,000,000.

The Castor-Bean Program

The Secretary of Agriculture, at the request of the Munitions Board, authorized early in 1951 a domestic production and procurement pro-

gram for castor-beans under authority of the Defense Production Act of 1950. This is a supply program, carried out with funds of the Commodity Credit Corporation, which will be reimbursed from funds authorized in the Defense Production Act for any losses incurred. The program is designed to provide a domestic source of supply for castor oil, a strategic commodity, to supplement importations of castor-beans and oil, primarily from Brazil and India.

To encourage participation by farmers, the Department is offering to purchase all castor-beans grown under contract in accordance with the contract provisions. The castor-beans are being grown in California and Arizona on irrigated land, and in Oklahoma and Texas, mostly on nonirrigated land. The program is being carried out through State and county PMA offices in Texas and Oklahoma and by a private company (under contract with Commodity Credit Corporation) in California and Arizona and in certain production centers in Texas and Oklahoma. The company had developed a supply of adapted, uniform seed following several years of work in cooperation with the Agricultural Research Administration.

Both the Commodity Credit Corporation and the company have executed contracts with farmers for the growing of castor-beans and both will have hulling and storage centers for receiving castor-beans at time of harvest. Under the company's contract with CCC, the company agrees to pay farmers not less than 10 cents per pound for all castor-beans delivered under its farmer-contracts, with the option of purchasing for CCC account if the market price of castor-beans falls below 10 cents.

In the administration of the castor-bean project, the Department of Agriculture is making available castor-bean combines, stripper harvesters, and hullers. As a result of research work, it will be possible this year to use machines for harvesting the nonirrigated crop, whereas in the past the Conner variety of castor-beans has been harvested mostly by hand.

The castor-beans to be acquired by CCC under this program will be processed into oil by private companies on a competitive basis for the account of CCC. The oil will be held for disposition as directed by the Secretary of Agriculture.

Defense Food Order No. 1

Defense Food Order No. 1, controlling the inventory and use of castor oil, was made effective on April 5, 1951, in view of supply and demand relationships which had forced the major producers and distributors of castor oil to adopt informal rationing programs and had brought expressions of concern from the Munitions Board over the adequacy of supplies for vital defense purposes. The Industrial Oils Advisory Committee considered the matter in its first meeting on March 12, 1951, and the recommendations of this group guided the formulation of the order.

Petitions for relief were received from more than 350 firms during the fourth quarter of the fiscal year 1951. A number of requests were denied and many were scaled down, but no appeals were made.

The current castor oil situation was reviewed by the Industrial Oils Advisory Committee at its second meeting on June 11, 1951. The committee supported the need for continuation of castor oil controls

through DFO-1, with minor amendments pertaining primarily to administration.

Agriculture-Import Order, and Defense Food Order No. 3

The authority for the administration of the import controls on fats and oils, oil-bearing materials, rice and rice products during the fiscal year 1951, was contained in Public Law 590, Eighty-first Congress. On June 30, 1951, Congress passed the thirteenth extension of that authority, but only as stop-gap legislation for a 31-day period. Also, on June 30, 1951, the Department issued Defense Food Order No. 3 which was designed to control importations deemed essential in the promotion of the national defense. This latter action was taken under the authority of the Defense Production Act of 1950.

During the fiscal year, the following products were deleted from the list of controlled commodities: Fatty acids, lard, lard compounds and lard substitutes, oleo oil and stearine, palm oil, soap and soap powder, edible and inedible fallow, combinations and mixtures of animal or vegetable oils, crude, refined, and denatured cottonseed oil, soybeans and oil, and sunflower seed and oil. Public announcements were issued regarding these changes in order to keep the importers and the cooperating governmental agencies advised with regard to the list of restricted commodities and to the policy for granting and denying licenses.

Items under import control at the end of the fiscal year were flaxseed, flaxseed screenings and linseed oil, peanuts, peanut oil and peanut butter, butter, butter oil, rice and rice products.

Research and Marketing Act Projects

A report entitled "Cash Costs of Farm Storage in Marketing Soybeans" was published during the year. It considers principally the cash costs of interest, insurance, and taxes in relation to soybean storage in 21 principal soybean States. It covers variations in source, cost, and advantage of the types of credit available for the purpose of storage; risks and insurance costs; the applicability of property taxes to stored soybeans; the effects from variations in these three factors to be expected on the farmers' soybean marketing schedules; and the comparative advantages of storing on the farm or at country elevators.

Another report, entitled "Improving Soybean Marketing Through Farm Storage," covers quality changes in soybeans during storage; methods and costs of maintaining grade and quality; handling and conditioning equipment; capital costs of farm storage buildings; annual costs and cash outlays associated with farm storage operations; and a comparison of farm and elevator storage costs.

It was found that the oil content of soybeans tends to increase the farther south the soybeans are grown, whereas protein content and drying capacity of the oil decrease. Such variations appear to be a function of temperature. These and other relationships are discussed in a report entitled "Marketing Study of the Oil Content of Soybeans as Related to Production Areas and Climate," published during the year.

Equations developed by PMA make it possible to estimate closely, from grade factors, the quantity of oil in a given lot of soybeans. Statistical tests indicate, for example, that 95 percent of the estimates made by using these equations would either equal the actual oil content or come within 1 percent of actual content.

An iodine-number refractometer, developed last year for quickly determining the oil quantity and quality in soybeans and flaxseed, has been placed on the market.

Analysis of data for the 1947-48 and 1948-49 marketing seasons indicates that operating-cost variations for the typical cottonseed-oil mill (from one season to another) are related more closely to volume of crushing than to any other factor. The analysis also indicates that cost variations (as between mills) are closely related to the size of the mill, large mills having lower costs than small mills. One report, "Distribution of Marketing and Processing Costs of Cottonseed-Oil Mills, 1947-48," was published; another, "Cottonseed-Oil Mill Characteristics and Practices," was being prepared for publication at the end of the year.

A report entitled "Cottonseed-Supply Areas," published during the year, contains information useful in determining the feasibility of establishing a new mill or enlarging or removing an old one in any possible mill location. Another report, "Differences Between the Average Actual and Minimum Possible Cottonseed Haul Distances by Oil Mills," contains information needed in adjusting available mill capacities in line with actual needs and in reducing present haul distances and costs. These reports were published in connection with an over-all project aimed at studying effects of new processing techniques on the industry, market outlets, and returns to producers.

Of various methods for determining rapidly the oil content of cottonseed, the most promising appears to be the dielectric measurement.

Analysis of available data indicates that there are extremely wide variations in oil mills' reports on costs of processing and marketing tung nuts. Among the more important factors affecting these costs are length of operating season, ratio of mill capacity to volume of production, and production per worker per day. One of the pressing problems has been scattered production, which results in too small a volume of nuts to keep mills busy. This situation is improving somewhat, however, as more trees are planted.

As part of an effort to develop new and expanded market outlets for peanuts, PMA, in cooperation with the Georgia Agricultural Experiment Station, has developed a new peanut product named "Peanut Snack." To test consumer reception, the product has been put on sale in four places.

A report, entitled "Lard Marketing as Affected by Commercial Processing Methods" (AIB 53), describes the more important lard processing steps, the equipment used, and the effect of production processes and equipment on marketability of the lard.

PMA cooperated with the Bureau of Agricultural Economics early in 1951 in a survey of consumers' preferences for cooking fats and oils so as to determine (1) sectional buying habits; (2) effect of income, race, rural or urban residence, and education on demand; (3) response to container size, shape, and material; and (4) refrigeration requirements.

FRUITS AND VEGETABLES

A continued high level of operation under marketing agreement and order programs; efforts to relieve surpluses of potatoes, honey, and fruits; the largest volume of inspection work in the history of the service; initiation of reports on motortruck shipments at point of origin; and a shift to defense activities high lighted activities of PMA in the fruit and vegetable field.

Marketing Agreement and Order Programs

During the year 30 marketing agreement and order programs, covering 22 different fruits, vegetables, and tree nuts from 28 different States, were in effect. The estimated farm values of the commodities covered by these programs was nearly \$750,000,000.

Ten potato marketing agreement and order programs were in effect as follows: Idaho and Malheur County, Oreg.; Colorado; Oregon-California; North Central States (Mich., Wis., Minn., N. Dak., Iowa, and Ind.); Virginia-North Carolina; New Jersey; eastern South Dakota; Maine; Washington; and New England exclusive of Maine. The New England program became effective during the year. Referendums were held for several potato programs developed during the preceding year, but because of adverse voting in referendums, the programs were never inaugurated. These included programs for central Nebraska, Nebraska-Wyoming, upstate New York, and Pennsylvania. The program on Maine potatoes was terminated in June 1951 following a referendum.

Marketing agreement and order programs were in effect during the year for the following citrus and deciduous fruits: California-Arizona desert grapefruit; California-Arizona lemons; California-Arizona oranges; Florida oranges; Florida grapefruit; Florida tangerines; California Tokay grapes; Colorado peaches; Georgia peaches; Utah peaches; California Bartlett pears, plums, and Elberta peaches; California Beurre Hardy pears; west coast winter pears; and Washington-Oregon fresh prunes. Similar programs were in effect for California-Oregon-Washington walnuts; southeastern pecans; Oregon-Washington filberts, and California almonds, the latter program being inaugurated during the year. Marketing agreement and order programs were also in effect for California dried prunes and raisins, west coast hops, and Colorado peas and cauliflower.

Four of these programs, namely, California-Arizona lemons, Colorado peaches, Oregon-Washington-California fall and winter pears, and north central potatoes, were amended during the fiscal year. In addition, proposed amendments were under consideration for west coast hops and California dried prunes at the close of the fiscal year. Several discussions were held with different industry groups regarding the development of marketing agreement and order programs for certain commodities. The regulatory orders issued under the provisions of these programs increased from 201 to 284.

Regulatory Activities

First operations were undertaken under the amended Perishable Agricultural Commodities Act (PACA) which provided for increased

license fees and for making the money received for such fees available for administration of that law, as well as for the administration of the Produce Agency Act and the Export Apple and Pear Act. License fees, including arrearage, amounting to \$409,420 were received and deposited in the PACA fund authorized by Congress.

At the end of the year 24,547 licenses were in effect, representing a decrease from the 26,021 licenses in effect on July 1, 1950. Complaints of violations during the year numbered 2,688. The number of active cases pending at the close of the year totaled 922, showing a slight decrease from a year earlier. Informal amicable settlement was effected in 1,278 cases. Payments made in connection with these settlements total \$932,420. Included in these informal settlements are 103 cases settled by informal arbitration. This method of settling disputes is becoming increasingly popular with members of the industry. About 60 percent of the cases filed this year were for failure to account and pay; 10 percent alleged rejection without reasonable cause; and about 15 percent were for failure to deliver.

A total of 262 orders were issued covering 224 cases with reparation awards totaling \$184,110. Because of failure to pay reparation awards within the time specified, 29 licenses were automatically suspended. One license was ordered revoked because of repeated flagrant violation of the act. United States District Courts enjoined two dealers from operating without the required licenses.

The first issue of volume II of the Digest of Decisions of the Secretary under the Perishable Agricultural Commodities Act was completed and distributed during the year.

Under the Produce Agency Act 26 complaints were received. Although there were no prosecutions under this act, two cases are pending with United States attorneys for prosecution. Very little enforcement work was necessary under the Export Apple and Pear Act.

Standard Container Acts

Under the Standard Container Acts of 1916 and 1928 a total of 341 containers (1,709 samples) were examined, 78 of which required correction. Tests were made of sample containers from 111 factories. On June 30, 1951, there were 195 factories making, or equipped to make, containers subject to the provisions of the act. Corrections of 58 containers were accomplished.

Canned Fruit and Vegetable Set-Asides

During the 1950 crop season the Armed Forces experienced a great deal of difficulty in obtaining requirements of canned fruits and vegetables. A part of their requirements were obtained through offer and acceptance, negotiations, and personal appeal. Most of their remaining needs were obtained through an intensive program under which both cannery and wholesalers were urged to sell products to the Armed Forces.

In April 1951 the Department issued Defense Food Order No. 2, which establishes the procedure for issuing set-aside orders for processed fruits and vegetables in order to apportion equitably defense requirements and thereby to insure fulfillment of defense needs. Two suborders covering the 1951 pack of canned fruits and vegetables, respectively, were issued under this basic order. The Armed Forces will procure supplies set aside under these orders.

Price Support on 1950-Crop Potatoes

Potato price-support operations during the fiscal year were confined to 1950-crop potatoes, inasmuch as support of subsequent crops is prohibited by provisions of Public Law 471, Eighty-first Congress, second session. Support activity actually began in January 1950 and continued until near the end of June 1951.

Preliminary figures indicate total 1950-crop purchase of 61,165,000 hundredweight at a gross commodity cost of \$68,368,000. The quantity and gross-cost figures for the 1950-51 fiscal year were approximately 58,973,000 hundredweight and \$66,066,000.

Table 3 summarizes all 1950-crop operations, of which a small part occurred in the preceding fiscal year.

TABLE 3.—*Preliminary report of estimated program cost and recovery by types of disposition for the 1950 crop of potatoes through June 30, 1951*

Disposal outlet	Quantity purchased	Commodity cost	Recovery	Net cost
	<i>1,000 cwt.</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
Donation section 416.....	3, 308	5, 309	0	5, 309
Stock feed.....	23, 083	24, 742	1, 485	23, 257
Export.....	364	614	217	397
Penal institutions.....	97	153	1	152
Starch.....	10, 406	11, 339	1, 814	9, 525
Flour.....	414	432	61	371
Experimental.....	4	5	(¹)	5
Repurchased by vendors ²	127	162	162	0
Dumped ³	23, 362	25, 672	320	25, 352
Total.....	61, 165	68, 428	4, 060	64, 368

¹ Less than \$500.

² Storage stock for which vendor fully reimbursed CCC for payments received.

³ Includes substantial quantity used for stock feed.

In accordance with section 416 of the Agriculture Act of 1949, recipients were required to take possession of donated potatoes at shipping points and to pay freight costs. This, in turn, led to the adoption of the same limitation as a general policy on all disposal operations, even though not required by law. In addition, costs were reduced further by absorbing the expense of grading, sacking, loading, and other marketing services only on donations for foreign and domestic relief, and by requiring buyers of potatoes for all other purposes to pay enough to reimburse Commodity Credit Corporation for services performed.

Donations only on f. o. b. basis, and payment by purchasers of freight as well as marketing-service charges, necessarily restricted outlets as compared with unlimited payment of these costs by CCC.

This fact undoubtedly contributed to the high proportion of potatoes dumped. It should be emphasized, however, that substantial quantities of these potatoes were used for stock feed on the farm where grown. Consequently, an undetermined but substantial quantity is known to have been fed to livestock in addition to the quantity actually shown as disposed of for feed.

Efforts to divert potatoes to the manufacture of alcohol were begun early in the year and were continued without letup until it was absolutely certain that such diversion was not practicable. Other raw materials were available from which alcohol could be manufactured more cheaply than from farm potatoes purchased at 1 cent per hundredweight bulk at the farm. This was true even though carriers offered reduced rates from Maine to Philadelphia and Baltimore. Therefore, the Department could have converted potatoes to alcohol only by paying most of the freight cost. Such payments did not appear to be in the public interest, especially in view of the fact that alcohol needed for the Government's rubber program—a potential market for potato alcohol—already had been acquired.

Honey Price Support

Price-support, export, and diversion programs in effect for honey were designed to assist the honey industry by removing surplus supplies from commercial channels, partially regaining prewar foreign outlets, and developing new uses in this country.

Under the 1950 honey price-support program, which ended March 1, 1951, a support price of 9 cents per pound was established for honey of U. S. Grade B, as defined in the U. S. Standards for Grades of Extracted Honey, effective March 15, 1943. Commodity Credit Corporation acquired approximately 7.4 million pounds from contracting packers. Approximately 6.8 million pounds were distributed through school lunch and institutional feeding programs, and 605,000 pounds were exported to Yugoslavia.

The 1951 honey price-support program provides support for most flavors of honey at 10.1 cents per pound to beekeepers, and about 15 flavors of limited commercial acceptability are supported at 9 cents per pound. The weighted average of these prices reflects approximately 60 percent of the March 15, 1951, parity price for honey in 60-pound containers of U. S. Grade C, as defined in U. S. Standards for Grades of Extracted Honey, effective April 16, 1951. No purchases had been made under the 1951 program as of June 30, 1951.

Other Stabilization Activities

Section 32 programs, providing for purchases of surpluses, export payments, or diversion operations for fresh fruits and vegetables, canned sour cherries, canned cranberries, processed citrus, honey, and dried fruit, were in effect during the fiscal year. In addition, purchases of concentrated orange juice, canned grapefruit sections, and canned tomatoes were made with school lunch program funds. Table 4 summarizes these operations.

TABLE 4.—*Summary of purchase, export payment, and diversion operations for fruits, vegetables, and honey, by types of program, fiscal year 1951*

[As authorized under sec. 32 of Public Law 320, 74th Cong., and sec. 6 of the National School Lunch Act of 1946]

Type of program and commodity	Unit	Quantity	Estimated total cost
			<i>Dollars</i>
Sec. 32 purchase:			
Canned sour cherries.....	Case.....	465, 386	1, 910, 766
Fresh apples.....	Bushel.....	2, 909, 804	6, 551, 820
Canned cranberries.....	Case.....	361, 734	1, 189, 765
Fresh vegetables.....	Ton.....	1, 037. 5	49, 451
Sweetpotatoes.....	Bushel.....	79, 413	134, 746
Honey.....	Pound.....	6, 805, 549	1, 017, 991
Sec. 32 export:			
Fresh apples.....	Bushel.....	2, 369, 529	2, 742, 872
Fresh pears.....	Box.....	365, 967	457, 459
Oranges.....	Box (fr. or fr. equiv.).....	4, 674, 080	6, 024, 591
Grapefruit.....	do.....	475, 344	447, 903
Dried prunes.....	Ton.....	19, 693	1, 850, 066
Raisins.....	do.....	14, 566	1, 396, 269
Dried apples.....	do.....	1, 602	320, 500
Honey.....	Pound.....	11, 291, 213	514, 266
Sec. 32 diversion:			
Honey.....	do.....	60, 000	2, 250
Sec. 6 (of National School Lunch Act) purchase:			
Concentrated orange juice.....	Gallon.....	1, 054, 803	2, 805, 766
Canned grapefruit sections.....	Case.....	160, 380	563, 049
Canned tomatoes.....	do.....	528, 757	2, 007, 741

Market News

Market news on fruits and vegetables was available from 24 permanent offices exclusive of Washington, D. C., and 29 seasonal-shipping-point offices. More than 11,500,000 copies of reports were issued during the year, in addition to the market news distributed through newspapers and radio stations and by other methods of communication.

Seasonal peach reports previously released from Nashville, Ark., were issued by the Little Rock office. This change provided a more economical service and from the standpoint of three major peach-producing sections of the State provided a more adequate service than previously. A seasonal office at Humboldt, Tenn., served the strawberry and vegetable industry of west Tennessee. This office was operated under cooperative agreement with the Division of Markets of the Tennessee Department of Agriculture. The Spartanburg, S. C., seasonal peach office was not operated during the summer of 1950 because of the very short crop. A limited service on South Carolina peaches was provided from the Federal-State market news office in Columbia.

In addition to the federally operated offices, several States conducted fruit and vegetable market news services under Federal-State cooperative agreements, supplementing the Federal service and providing

a much broader coverage than could have been provided by the Federal department alone. Such offices were operated on a year-round basis at Richmond, Va.; Asheville and Raleigh, N. C.; Jacksonville, Fla.; Montgomery, Ala.; Baton Rouge, La.; Nashville, Tenn.; Frankfort and Louisville, Ky.; Columbus, Ohio; Charleston, W. Va.; Madison, Wis.; Fayetteville, Ark.; Oklahoma City, Okla.; Salt Lake City, Utah; and Sacramento, Bakersfield, Fresno, and Santa Maria, Calif. Seasonal work of this nature was conducted by States at Yuma, Ariz.; Salinas, Calif.; and Salisbury, Md. Cooperative agreements were in effect with 28 States and the Territory of Hawaii.

New funds were appropriated permitting a limited expansion in the reporting of truck movements through coverage of shipments from several producing areas and of receipts in three additional terminal markets. Research under Research and Marketing Act funds had demonstrated the practicability of reporting truck shipments in certain areas and under certain conditions. It also demonstrated that for other areas and conditions there is no apparent way to compile truck movements on a shipping-point basis. For such supplies truck arrival records on a large number of markets seem to be the only method. In the fall of 1950, cooperative agreements were entered into with the (1) California Department of Agriculture to report daily interstate truck passings at California road guard stations; (2) Arizona Fruit and Vegetable Standardization Service to report truck shipments from major producing areas; (3) Texas Federal-State Inspection Service to report truck passings from the Lower Rio Grande Valley quarantine stations; and (4) Florida Department of Agriculture to report outbound interstate truck passings at north Florida road guard stations. Most of these arrangements were placed in effect during November and continued during the rest of the fiscal year. Truck shipments reported in carlot equivalents for these States during the 7-month period December 1950 through June 1951 were: Arizona, 7,059; California, 20,981; Florida, 72,504; Texas, Lower Valley, 6,501. The Texas figures are not representative of a normal movement, inasmuch as crops were largely destroyed by a late January freeze.

As in previous years, transportation reports on fruits and vegetables were issued. These included daily reports of carlot shipments, unloads of major fruits and vegetables in 100 United States and 5 Canadian markets, and truck shipments on a few commodities in a few areas. Weekly mimeographed reports on peanuts and semimonthly reports on honey were maintained.

Standardization

Standards for Fresh Products

United States standards for apples were revised in time for use on the 1951 crop, and United States standards for green corn, bunched beets, and California oranges were revised and reissued. New standards were issued for blueberries and broccoli for processing. Proposed revisions were also completed for almonds in the shell, shelled almonds, sweetpotatoes for canning, and sweetpotatoes for dicing or pulping.

Investigations have been completed regarding unshelled pecans and the revised standards will become effective in the coming fiscal year.

Investigations regarding revisions of standards for shelled English walnuts has been started. Field investigations have been conducted as a basis for issuing standards for tomatoes, green corn, celery, cucumbers, cabbage, brussels sprouts for freezing, potatoes for processing, and gladiolus.

Work Under the Research and Marketing Act

United States consumer standards for apples were developed and will become effective for the 1951 crop. Field investigations were completed and consumer standards were issued for brussels sprouts, kale, and Italian sprouting broccoli.

Tests were made at peanut-shelling plants located in five States, to determine the degree of accuracy with which the quality and grade of peanuts could be measured by sample inspection, the primary emphasis being laid on foreign material content. Other tests were made to study the effects of different designs of sampling tubes on the amount of foreign material obtained in the sample and to develop certain types of mixers and dividers. On the basis of investigation during the past year, a proposed revision of the United States standards for shelled white Spanish peanuts has been published.

Cooperative research with the Maryland Agricultural Experiment Station was continued in the development of objective tests and easily applied measures of quality for various vegetables. Emphasis was placed on the shear press, a newly developed device for testing maturity or tenderness. This was conceived as a multipurpose tester which could be adapted for use with any one of several products by means of an interchangeable sample-box assembly. The device was tested with peas and lima beans, and, to a limited extent, with asparagus. Two firms have agreed to manufacture a limited number of these devices for experimental use. A color and color-difference meter was used to determine the color of tomatoes. The tenderness of snap beans was measured with the fiber-pressure tester. Objective tests of the maturity of sweet corn were made with a succulometer, a liquid-cell electric moisture tester, a puncture meter, and a refractometer.

Standards for Processed Products

Research and Marketing Act funds were used in the development of new standards and in the revision of existing standards. New standards were published for cranberry sauce and orange marmalade. Revised or amended standards were published for honey, sulfured cherries, canned blueberries, applesauce, grape juice, lima beans, and sweetpotatoes, and for frozen blueberries, concentrated orange juice, and brussels sprouts. Proposals for new or revised standards were published but not made effective for maple sirup, canned green and wax beans, frozen lima beans, diced carrots, field peas and black-eye peas, and spinach. Studies were made of revisions of standards for grades of canned beets, pears, concentrated orange juice, frozen apples, asparagus, cauliflower, dried apples, prunes, and raisins.

Other Activities

In cooperation with other Government agencies, a total of 32 Federal specifications were developed or revised.

Staff technicians assisted inspection supervisors in the training of inspectors on grade interpretations, and prepared handbooks of instructions for various commodities. A total of nearly 2,500 visual aids, including plaster models, black and white photographs, color photographs, and painted colored models, were distributed to field inspection offices. More than 130,000 copies of standards were distributed.

In cooperation with the Eastern Regional Research Laboratory, a comparator and permanent glass color standards were developed for extracted honey and arrangements were made for their distribution to industry. Continued progress was made in the revision of up-to-date bulletins dealing with the preparation of fresh products for market.

Inspection

Fresh Products

A total of 1,335,884 carlots of fresh fruits and vegetables, including farmers' stock peanuts, was inspected during the year as follows:

At shipping points 816,555; in receiving markets, for commercial inspection, 45,556, and for public and private agencies, 47,597; raw products for processing plants, 346,476; farmers' stock peanuts, 79,568; and continuous inspection under consumer grade, 132. The shipping point inspection is carried out under cooperative agreements with each of the 48 States and the Territory of Hawaii. Arrangements have been completed for the extension of this service to Puerto Rico. At the year's end, 71 offices were making market inspections.

One of the more important types of fresh-product inspection, which directly serves producers, is inspection of raw products for processing at country points where inspectors are stationed throughout the season. In this type of inspection the producer brings his products to the inspection station for inspection in terms of United States Standards, or on contract specifications. The buyer then purchases the products on the basis of this inspection. This work is conducted in practically all States, and in 1951 amounted to 346,476 carload equivalents.

Processed Products

The following processed products were inspected during the year: Canned fruits and vegetables, 150,568,127 cases; canned marine products, 1,061,247 cases; frozen products, 914,260,030 pounds; dried products, 107,614,360 pounds; dehydrated products, 3,535,016 pounds; other processed products, 82,899,412 pounds. As compared with the previous fiscal year, these represented sharp increases with respect to canned fruits and vegetables, canned marine products, frozen products, and other processed products.

The number of plants approved to pack under continuous inspection as of June 30, 1951, was 134 as compared with 111 a year earlier. There were increases in canned and frozen fruits and vegetables and miscellaneous processed products packed under continuous inspection. The sharpest increase was for frozen products, for which the total pack has increased sharply in recent years.

As of June 30, 1951, field offices handling inspection of processed fruits and vegetables were being operated as follows:

Atlanta 3, Ga.	Winter Haven, Fla.	Fresno, Calif.
Baltimore, Md.	Cedar Rapids, Iowa.	Los Angeles, Calif.
Boston, Mass.	Chicago, Ill.	Portland, Oreg.
Easton, Md.	Columbia, Ohio.	Salem, Oreg.
New York, N. Y.	Detroit, Mich.	Salt Lake City, Utah.
Philadelphia, Pa.	Fayetteville, Ark.	San Francisco, Calif.
Portland, Maine.	Hammond, La.	San Jose, Calif.
Richmond, Va.	Knoxville, Tenn.	Seattle, Wash.
Rochester, N. Y.	Ripon, Wis.	Stockton, Calif.
San Juan, P. R.	Weslaco, Tex.	Yakima, Wash.
Washington 25, D. C.	Denver, Colo.	Honolulu, T. H.

Cooperative trust fund agreements established with cooperating State agencies and associations of processors or trade associations totaled 36 at the close of the fiscal year.

Marketing Research Under the Research and Marketing Act

At the end of the fiscal year 1951, a total of more than 23,000 retailers or their employees had been instructed in methods of merchandising fresh fruits and vegetables through a training program sponsored by PMA. Nearly 2,600 separate retailer training classes have been conducted since the beginning of the program, and of these 585 were conducted during the 1951 fiscal year. This work is carried on under a contract with the United Fresh Fruit and Vegetable Association. The holding of evening classes made it possible to reach a larger number of retailers than was possible in day classes, as many of those who operated small stores found it difficult to leave their stores during the day. The program also was extended to include the training of employees of wholesalers to give specific assistance to retailers in the adoption of improved methods of merchandising fresh fruits and vegetables. At the close of the fiscal year, field work had been completed on a study of the effect of this retailer training program upon the reduction of waste and spoilage losses and upon the volume of sales.

Research on the prepackaging of fruits and vegetables has been aimed primarily at the development and testing of more efficient methods of prepackaging fresh fruits and vegetables in consumer-size units at shipping points. Research during the 1951 fiscal year resulted in the development of an apple bagging chute which enables the semiautomatic bagging of apples. This chute may have application to the packaging of other fruits and vegetables in transparent film bags. The development of this device, made possible through a research contract with the Washington State Apple Commission, was one of the chief factors permitting efficient packaging of apples in consumer units. Prepackaging research was also conducted for sweet corn, tomatoes, carrots, and cherries. Improvement of the marketing of fresh spinach, kale, and collards grown in the Norfolk area of Virginia was reported on during the year.

Many of the sweetpotatoes produced on the Eastern Shore are marketed soon after harvest, because growers and handlers have the idea that the principal variety grown there does not store well. As a result, marketings are concentrated into a relatively short period in September and October. There is a need for lengthening the marketing period by finding effective ways to store the Maryland Golden

variety or by changing at least part of the production to a more acceptable variety which stores well. One of the needs is for more care in harvesting sweetpotatoes on the Eastern Shore to reduce damage and retard spoilage.

To make possible more intelligent marketing decisions by growers, packers, and processors in the citrus and dried fruit industries on such matters as utilization of crops in alternative outlets, pricing, and timing of marketings, data have been made available, in cooperation with the Bureau of Agricultural Economics and industry groups on consumer purchases and retail distribution of citrus fruits, canned and frozen juices, and dried fruits. This work has been carried on under contract by Industrial Surveys Co., Inc., which has collected data on availability and stocks of various fresh fruits, canned and frozen juices, and dried fruits in a national sample of retail food stores. Information on consumer purchases of these same products has been collected from a national sample of households. These data are made available to all interested groups through a regular series of publications issued jointly by PMA and BAE monthly, quarterly, and semiannually.

Cooperative arrangements were continued with the Agricultural Experiment Stations at Geneva, N. Y., Columbus, Ohio, and La Fayette, Ind., for research to determine grade and quantity of canned tomatoes, tomato juice, and tomato puree that could be processed from given qualities of raw tomatoes. Test lots of raw tomatoes, ranging in quality from 100 percent U. S. No. 1 down to 35 percent U. S. No. 1, were prepared and processed, yields in terms of finished product were recorded, and the quality of the canned product was determined. Tests were made on the raw product and the finished product to determine such factors as color, percentage of total solids, acidity, viscosity, and vitamin C content.

In cooperation with the Agricultural Experiment Station at Cornell University a study was made of the deterioration of potatoes between Long Island shipping points and consuming centers in New York City. The study indicated that potatoes lose a considerable part of their good qualities because of rough and improper handling and careless grading practices at shipping point and in the marketing channel. As a result of this work and other studies of this nature, growers, shippers, handlers, and retailers are becoming more aware of quality losses that take place during marketing and of some of the remedial steps that can be taken.

Inspection services and technical advice were furnished in connection with several regional projects conducted in cooperation with agricultural experiment stations and other cooperating departmental agencies. In this work the PMA has participated in research projects designed primarily to determine the quality and condition of fruits and vegetables offered for sale in retail stores and the effect of such quality and condition upon prices and movement. Work of this nature was conducted in Detroit by the agricultural experiment stations of the North Central States to find ways of improving the marketing of apples. Similar work was undertaken by the agricultural experiment stations of the western States in connection with peach marketing in Milwaukee and other Midwestern cities. In the Northeast, a similar study of peach marketing was conducted under the leadership of the New Jersey Agricultural Experiment Station.

GRAIN, FLAXSEED, SOYBEANS, BEANS AND PEAS, AND SEEDS

Production of grains, oilseeds, pulses, hay and pasture seeds, and winter cover crop seeds in 1950, while generally less than in 1949, exceeded the 1939-48 average, despite reductions in harvested acreage of several of the more important crops. Record production on increased acreage was recorded in 1950 for soybeans, grain sorghum, and red clover seed.

Price Support

Price-support programs were formulated and administered for 1950-crop corn, wheat, oats, barley, rye, grain sorghums, rice, dry edible beans, flaxseed, soybeans, and many varieties of winter cover crop seeds, and hay and pasture grass seeds. Heavy demand and favorable market prices, generally, resulted in reduced participation in 1950 price-support operations, as compared with 1949.

High lights of price-support operations for individual 1950 crops are as follows:

CORN.—National average support price, through loans and purchase agreements, \$1.47 per bushel in the commercial corn area and \$1.02 to \$1.30 per bushel in the noncommercial area. Support price based on 90 percent of the October 1, 1950, parity price in the commercial corn area and 75 percent of 90 percent of the October 1, 1950, parity price in the noncommercial corn area. Support extended: 54,-300,00 bushels, having a value of \$76,300,000.

WHEAT.—National average support price, through loans and purchase agreements, \$1.99 per bushel. Support price based on 90 percent of the July 1, 1950, parity price. Support extended: 197,100,000 bushels, having a value of \$392,600,000.

OATS.—Support price, through loans and purchase agreements, 71 cents per bushel, based on 75 percent of the parity price as of July 1, 1950. Support extended: 15,000,000 bushels, having a value of \$10,-200,000.

BARLEY.—Support price, through loans and purchase agreements, \$1.10 per bushel, based on 75 percent of the parity price as of July 1, 1950. Support extended: 30,600,000 bushels, having a value of \$34,100,000.

RYE.—Support price, through loans and purchase agreements, \$1.28 per bushel, based on 75 percent of the parity price as of July 1, 1950. Support extended: 1,300,000 bushels, having a value of \$1,600,000.

GRAIN SORGHUMS.—Support price, through loans and purchase agreements, \$1.87 per 100 pounds, based on 65 percent of the parity price as of July 1, 1950. Support extended: 33,800,000 hundredweight, having a value of \$65,800,000.

RICE.—Support price, through loans and purchase agreements, \$4.56 per hundredweight or \$2.05 per bushel. Support price based on 90 percent of the August 1, 1950, parity price. Support extended: 800,-000 hundredweight, having a value of \$4,000,000.

DRY EDIBLE BEANS.—Support price, through loans and purchase agreements, an average of about \$6.30 per hundred pounds, based on 75 percent of the parity price as of September 1, 1950. Support extended: 1,600,000 hundredweight, having a value of \$11,000,000.

FLAXSEED.—Support price, through loans, purchase agreements, and purchases only from producers in 32 Texas counties, \$2.57 per bushel. Support price based on 60 percent of the parity price as of April 1, 1950. Support extended: 1,000,000 bushels, having a value of \$2,400,000.

SOYBEANS.—Support prices, through loans and purchase agreements, \$2.06 per bushel for green and yellow soybeans grading U. S. No. 2 or better and \$1.86 per bushel for brown, black, and mixed soybeans; based on 80 percent of the parity price as of September 1, 1950. Support extended: 15,200,000 bushels, having a value of \$31,700,000.

HAY AND PASTURE GRASS SEEDS.—Price support, through loans and purchase agreements, was available to producers on many varieties of seeds, including alfalfa, various kinds of clovers, lespedeza, and various grasses. Support prices ranged from 3½ cents a pound for common Sudan seed to \$1.25 a pound for certified Ladino clover. Support was extended covering 20,200,000 pounds of seed, having a value of \$6,800,000.

WINTER COVER CROP SEEDS.—Price support was available to producers through loans and purchase agreements, and to eligible dealers through dealer purchase agreements on all varieties of winter cover crop seeds, excepting Blue Lupine, on which the price was supported through purchase agreements only. Support prices ranged from \$4.52 per 100 pounds on Austrian Winter Peas to \$16.30 per 100 pounds on Crimson Clover. Support was extended covering 408,400,000 pounds of seed, having a value of \$19,500,000.

Exports

Exports of grains and grain products fell off in volume during the fiscal year 1949–50 to approximately 12,300,000 long tons, as compared with the record shipments of about 17,800,000 long tons during 1948–49. At the start of 1950–51 it was believed that exports of grain, particularly wheat, might be further reduced, because the economies of most of the war-devastated countries had recovered substantially, production of foods in these countries had approached normal, and the world's supply of food and feed grains had reached a fairly high level. American exports of wheat (including flour) during July–December 1950 totaled only about 111,000,000 bushels. Importing countries did not take the full United States export quota of wheat under the International Wheat Agreement during 1949–50, and it appeared during the early months of 1950–51 that the same thing might happen again.

The war in Korea, however, brought about a complete change in the export situation, which became evident in the late fall months of 1950. By December 1950, war psychology had hit most of the wheat-importing countries, and they rushed to buy United States wheat and to a lesser extent feed grains, to build up larger reserve stocks against possible emergencies and to hedge against expected inflationary price increases. The food crisis in India accelerated the foreign demand for American grains. By midyear the United States became the only supplying country in which grain could be obtained in quantity.

During January, serious congestion developed in many ports; there was uneconomical use of our transportation systems; and ships could not be obtained fast enough to relieve glutted port facilities. Despite the disturbed conditions, exports of grain were at a high level during January and February, but much of the grain was not going to the countries where needs were most serious. The CCC, for example, was having difficulty in meeting its high-priority commitments for Germany, Austria, Greece, India, and the Pacific areas. It became clear that Government action would be needed to restrict and regulate movements of grain to seaboard. PMA officials held a number of conferences with representatives of other Government agencies concerned and the trade to determine whether it would be advisable to resort to allocations and export licensing of grains, or some other type of control. Finally, Order DTA-2 was issued by the Defense Transport Administration on March 1. PMA cooperates closely with the Office of Defense Transport in administering this order.

Exports of grain continued at near-record levels each month during the last half of the fiscal year, when shipments of wheat (including flour) totaled about 253,000,000 bushels. Exports of all grains during 1950-51 totaled approximately 15,800,000 long tons, an increase of about 3,500,000 tons over 1949-50. The 1951 carry-over of wheat was reduced to about 395,000,000 bushels, compared with 427,000,000 bushels in 1950; and the carry-over of all feed grains was reduced to about 28,400,000 short tons, compared with 31,200,000 short tons in 1950.

The International Wheat Agreement

It was announced on March 29, 1951, that the sales quota guaranteed the United States under the 1950-51 International Wheat Agreement program—248,164,000 bushels—had been filled. Wheat was sold under the agreement during the year to 37 countries, large quantities being sold to Germany (58,000,000) bushels, India (28,000,000), United Kingdom (24,000,000), Netherlands (21,000,000), and Italy (14,000,000). All wheat was sold at or near the maximum price under the agreement—the equivalent of \$1.80 per bushel, basis bulk wheat in store at Fort William-Port Arthur, Canada, in terms of United States currency.

(Exports under the International Wheat Agreement are included in export data discussed in the preceding section, entitled "Exports.")

The CCC paid subsidies of \$178,180,000 on 265,779,000 bushels of wheat—including sales under the 1950-51 IWA program, as well as under parts of the 1949-50 and 1951-52 programs—or an average subsidy for the fiscal year 1951 of 67 cents per bushel.

Production Adjustments

Acreage Allotment Programs

Acreage allotments, without marketing quotas, were in effect on the 1950 crops of wheat, corn, rice, and dry edible beans. At the beginning of the fiscal year 1951, indications were that similar allotment programs would be required for the 1951 crops. During the summer of

1950, PMA took necessary steps to develop the 1951 acreage allotment program on wheat. Regulations and instructions were prepared and issued, and on July 14 the national wheat acreage allotment was proclaimed at 72,800,000 acres, which was approximately the same as the 1950 allotment. This was followed on August 1 with announcement of the 1951 State wheat allotments, and soon thereafter the State allotments were apportioned to counties and to individual wheat farms. The 1951 national rice acreage allotment was proclaimed on December 6 at approximately 1,900,000 acres, which was 15 percent larger than the 1950 rice allotment had been. Work was continued during the fall months in preparation for the expected 1951 corn and bean acreage allotment programs, which normally are announced in midwinter.

The invasion of Korea, however, changed supply requirement relationships. On January 5, 1951, the Department announced immediate discontinuance of the 1951 wheat acreage allotment program, and proclaimed the fact that there would be no acreage allotments on the 1951 crop of corn. On February 1, the 1951 allotment program on rice also was terminated, and on February 14 announcement was made that there would be no 1951 allotments on dry edible beans.

As the fiscal year 1951 drew to a close, PMA's studies pertaining to supplies and requirements for wheat indicated that no acreage reduction program should be in effect for the 1952 crop of wheat. On June 29, 1951, the Secretary issued a proclamation to that effect.

Foundation Seed Program

The foundation seed program has been continued for the purpose of purchasing and limited stockpiling of breeder's, foundation, and registered seeds in order to increase the seed supplies of improved varieties of grasses and legumes. Production contracts for 1950 crop for 93 acres of Atlantic and 458 acres of Buffalo alfalfa, 432 acres of Kenland red clover, and 14 acres of Tift sudan grass resulted in purchases of 2,754 pounds of Buffalo alfalfa, 58,058 pounds of Kenland red clover, and 28,574 pounds of Tift sudan grass seed. Production contracts have been executed for the 1951 production of 102 acres of Atlantic, 55 acres of Buffalo, 228 acres of Narragansett, and 324 acres of Ranger alfalfa, and 1,455 acres of Kenland red clover.

Seed-Supply Program

The supply program for seeds and plant materials has consisted mainly in procurement of small quantities for the Economic Cooperation Administration. The ECA technical assistance programs in the cooperating countries requisition many kinds of plants which are planted both to improve their seed stocks and to try new kinds of crops. The ECA technicians, in cooperation with plant experts, select the kind of crops to be experimented with, and send requisitions to PMA. During the last fiscal year approximately 130 varieties of vegetable seeds; 280 varieties of field seeds; and 250 varieties of planting materials, including tree seeds, vines, scions, and plants, have been purchased and shipped. These have been shipped to West Germany, Italy, Burma, Greece, and Yugoslavia.

Market News

Market news reports were issued during the fiscal year through 6 Federal offices and 11 Federal-State offices. Requests for market information and reports continued to increase and approximately 1½ million mimeographed copies of market reports giving current prices, market conditions, and information about factors affecting the supply and demand for the various commodities were issued directly from the Federal offices. More than 600 radio stations and many farm and trade papers disseminate parts of the reviews. The Federal-State services prepared and released about 100,000 copies of market reports direct to local growers and feeders in the participating States. Local radio stations and newspapers also aided in disseminating the information.

States participating in the Federal-State program were Alabama, Arkansas, California, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oregon, Tennessee, and Virginia. One of the significant features of the year's program was the improvement and expansion of the Federal-State market news projects on grain and feed in the Southern and Southeastern States. Because of the absence of terminal markets and large distributing centers in these areas, accurate market information on grain and feed has been difficult to obtain. Farmers and feeders in these States therefore have had little information on market prices and conditions to guide them in their production and marketing. The extension of Federal-State market news service to these areas now makes available to farmers and feeders in 10 of these States current information suited to their needs on prices and conditions in grain and feed markets.

Regulatory Activities

United States Grain Standards Act

The total inspections of grain during the fiscal year 1951 was the largest in history. The number of appeals also was large, representing normal average percentage of appeals from original inspections by licensees. Heavy movement of grain for export again contributed to the large number of inspections.

Several problems were encountered in connection with the interpretation of the official standards. For the first time in many years there was serious damage from severe August frosts in Montana and the Dakotas. Much wheat and some barley from that area was affected. Prompt action was taken to alert inspectors and supervisors to the correct interpretation of damage from this cause. Frost in some of the Southwestern States resulted in a harvest of considerable quantities of grain sorghums that were immature. Many of these lots carried an odor not common to newly harvested grain sorghums, and an interpretation problem arose. Personal contacts with field supervisors and inspectors, and an exchange of samples resulted in a meeting of minds on the correct interpretation of this odor as it affects the grade of grain sorghums. Generally the problem of germ-damaged wheat was not as acute as in previous years. In the Nebraska area, however, conditions with respect to this type of damage were the worst in history. This condition always delays

inspection and makes intermarket uniformity as to grade of the grain difficult to maintain.

More interest was shown by various groups in the weevil problem. Serious damage from this cause continues to manifest itself. An effort was made during the year to clarify the procedure followed in the grading of grain in which weevil infestation is apparent. The condition still contributes to many controversies regarding the grade or quality of grain.

Standardization

All equipment used in the inspection of grain and related commodities is periodically checked for accuracy and possible need of replacement. Most of the grain-grading equipment throughout the country was thus checked at least once during the year.

Studies on the relationship between electrical properties and moisture content of grain were continued to determine when changing practices in the production and handling of grain and/or changes in the principal varieties grown have exerted sufficient influence on this relationship to justify changes in the calibration of electrical moisture-testing equipment used in the inspection of grain. As a result of these studies the calibration for use in testing all soft red winter wheat and the white wheat that is produced in the eastern part of the country has been changed, effective July 1, 1951. It is believed that this action will tend to reduce the amount of deterioration in quality encountered in the storage of wheat of the affected classes.

New developments in grain moisture-testing equipment were studied and comparative tests were made to determine the relative merits of several types of grain moisture testers.

Much data and other information on the grading and inspection of rye and soybeans during the past several years were accumulated from field offices during the first half of the fiscal year as a result of petitions received from organized groups requesting that revisions be made in the standards for these grains. No changes were made in the standards for soybeans; but the rye standards were revised effective July 1, 1951.

Because of the increasing importance of safflower seed as a commercial oilseed crop, preliminary work was undertaken toward the development of standards for this commodity.

In cooperation with the Bureau of Plant Industry, Soils, and Agricultural Engineering, milling, baking, and chemical tests were made on a large number of samples of hard red spring wheat; and milling, macaroni making, and chemical tests were performed on samples of durum wheat. This work was part of the Department's wheat-breeding program, in which superior varieties of wheat for the various wheat-producing areas of the country are continually being developed.

Samples of hay taken in connection with a cooperative project on quality and feed value of forage, cured or preserved by various methods, were graded. These experiments compared rates of curing of crushed and uncrushed hay, and treatments of undercured, field-baled hay with sulfur dioxide. Crushed hay cured more rapidly than the uncrushed hay, and sulfur dioxide retarded mold development but did not prevent it.

Samples of hay used in feeding trials and curing and storage studies were graded for the agricultural experiment stations of Connecticut, Georgia, Illinois, New York, Ohio, Oklahoma, and Vermont.

Studies were continued to determine the milling, baking, and chemical properties of wheat representing receipts of the various classes and grades of country-run wheat at the principal terminal markets.

In cooperation with the Provisions Technical Committee and the Feed and Forage Technical Committee of the Federal Specifications Board, amended, revised, or new specifications for more than 40 commodities were prepared or reviewed.

Market Inspection of Farm Products

Large quantities of Michigan and New York beans were inspected and many were found to be out of condition, and some were off color. Inspections were made before and after reconditioning in an effort to aid in the merchandising of these beans.

Inspections for condition were also made of large warehouse holdings of other commodities. Periodic examinations were made as requested by CCC of storage lots of vegetable oils, mostly linseed oil and soybean oil, as well as rice, beans, peas, and grain. These inspections or examinations revealed changes in the condition of the commodity in storage and served as a guide to the need for reconditioning or disposition of the commodity.

The quantity of alfalfa seed verified as to origin was much less than the record high of the 1950 fiscal year. Several apparent violations with respect to origin representation were found. These involved the blending of alfalfa seed of southern origin with seed of northern origin and Canadian origin. Some of the seed was seized, and action under the Federal Seed Act is contemplated. The "Instructions and Procedure for Origin Verification of Seed" was amended effective July 1, 1951, to provide for origin verification of Canadian alfalfa seed.

Federal Seed Act

More than 100,000,000 pounds of agricultural and vegetable seed valued at more than \$20,000,000 were tested and admitted from foreign countries under the Federal Seed Act. Principal agricultural seed importations, in pounds, include—sweetclover, 18,000,000; crimson clover, 13,000,000; alfalfa, 13,000,000; smooth brome, 10,000,000; rape, 5,000,000; fescue, 4,000,000; Ladino clover, 2,000,000. About 800,000 pounds of crimson clover were refused admission because of low germination. Principal vegetable seed importations were spinach, mustard, garden pea, radish, and turnip. Importations of spinach seed exceeded 2,000,000 pounds. There was an increase in the number of kinds of grass seeds imported, particularly those adapted in the Southern States.

Approximately 335 State inspectors actively cooperated in the sampling and inspection of seed shipped in interstate commerce. During the year the shortage of northern hardy alfalfa seed and the ample supply of southern seed created an unusually wide difference in price and an unusual temptation to misrepresent the origin of southern alfalfa seed. Investigations were started in the fall of 1950 in the southern producing area and were continued through the central and northern channels of distribution. Approximately 1,500,000

pounds of alfalfa are known to have been misrepresented as to origin and more than 800,000 pounds of this were seized and relabeled or stained before being released for export or domestic sale. The number of actions pending in Federal court has increased, but the general quality of seed sold throughout the United States in retail channels has materially improved.

Continued attention was given to the labeling of seed with respect to variety. Substantial improvement is noted in the variety representations contained in seed catalogs. An advisory committee that has for 3 years considered varietal nomenclature in hybrid corn, concluded that substitution of variety names in channels of distribution constitutes false labeling in violation of the Federal Seed Act. The committee recommended that new names be given to new varieties, but that to be so considered the variety must be different from others in some way of significance or importance to the planter. Hybrid seed corn sold under any recognized name should be the same genetically year after year, and extensive tests are considered necessary to determine that this conclusion is adhered to.

Differences in methods followed in different countries in testing seed in foreign commerce continue to be a source of annoyance in the fulfillment of contracts with respect to quality of seed. Efforts continued through the year to standardize the methods of testing through the facilities of the International Seed Testing Association.

Prevention of Adulteration of Grain

Action was again taken in cooperation with the Food and Drug Administration to prevent the adulteration of grain. Notices were given to owners or custodians of low quality, out-of-condition grain encountered in the course of inspection that the mixing of such grain with grain of higher quality would likely be in violation of the Federal Food, Drug, and Cosmetic Act. The grain was then diverted mostly to feed uses.

Evidence was furnished to the Food and Drug Administration on cars of wheat and rye which had been deceptively loaded with out-of-condition grain or screenings in the bottom of the car of otherwise good-quality grain. Grain of this character, when shipped in interstate commerce, is regarded as an adulteration within the meaning of the Federal Food, Drug, and Cosmetic Act. Court proceedings were instituted and the offending shippers prosecuted or the grain was seized and later released under bond to be segregated and the low-grade grain or screenings disposed of for animal feed.

Activities Under the Research and Marketing Act

Tests of appropriate weights of film for packaging dry beans and peas, and rice were completed and recommendations are being prepared for release to the industry. Investigation of the bleaching of green and yellow split peas in film packages under daylight and under strong fluorescent and incandescent lights, indicated that colored or overprinted film may reduce the bleaching significantly. Preliminary tests of insect damage to various cellophane packages disclosed that additional protection against insects is needed, since all the containers tested were readily penetrated by some insects.

Because of the probable shortages of cellophane and other packaging materials resulting from the national emergency, attention was directed to economies in the use of such materials and the possibility of substitutes.

Work on measuring the bread-baking quality of wheat confirmed former indications that the sedimentation test devised by PMA is a valuable index of this quality in hard wheat. This test may be applied also to the wheats produced in the western part of the United States.

The iodine-number refractometer, developed last year under the project set up to devise methods and apparatus for the quick determination of oil quantity and quality in soybeans and flaxseed, is now on the market. Work is being done also with electronic dielectric testers which show much promise for use in determining quickly the oil content in a solvent-oil mixture. A high-speed, grinder extractor has been developed for use with these testers. Attempts are being made to develop a less expensive grinder extractor, to test further the electronic dielectric testers, and to study thoroughly the variations in iodine numbers of flaxseed and soybean oil which result from the different extraction methods.

Study of the sampling of grain in large modern railway cars indicates the need for a long grain trier and of regulations providing for working space of from 30 to 36 inches in the tops of the cars. An aluminum alloy trier developed during the year is slightly longer and much lighter in weight than the older standard brass trier.

An automatic sampler to secure representative samples of grain being loaded into boats, barges, or box cars was developed, because none of the automatic samplers now used commercially seemed suitable for official inspection use. This sampler is now being tested under usual inspection conditions.

An improved method for determining whole and broken cones in hops was developed. The data obtained on this subject indicate that substantial improvements are possible in the handling of hops. The findings show that the moisture content of most hops is reduced too much by artificial drying, and that the hops are baled too soon after drying. Hops with a moisture content of 10 to 11 percent are less subject to breakage during handling than those of a lesser moisture content.

A handbook covering the various phases of seed testing, entitled "Manual for Testing Agricultural and Vegetable Seeds," was completed. It will serve as a help for seed analysts, promoting uniformity of findings. Results obtained by Federal and State seed law enforcement officials in determining germination and purity on commercial lots were studied by personal contacts between laboratory workers, and some improvement was made in uniform interpretations.

Progress was made along two lines in the development of a simple fat acidity test. One consists of using a specially prepared crystal violet base which turns to a deep purple upon the addition of acid. The other involves the use of colored indicators in titrations. Further work will be required before either method is practical. Work was continued in the determination of normal fat acidity values for each kind of grain.

Cooperation with the Bureau of Dairy Industry was continued in feeding tests on the nutritive value of alfalfa and lespedeza hay.

Primary emphasis was placed in these tests on a comparison of the values of high grades and low grades in milk production and dairy heifer growth.

A survey of the quality of hay produced by New Jersey farmers in 1950 was made in cooperation with the New Jersey Agricultural Experiment Station. Approximately 20 percent of the samples graded No. 1, 42 percent graded No. 2, 21 percent graded No. 3, and 17 percent was sample grade. About 70 percent of the sample grade hay was moldy and musty, probably because of excess moisture when stored. This knowledge will aid efforts to improve the quality of hay on farms.

Improved equipment and methods were developed for use in grading rice. These include a rice sheller which removes hulls efficiently from rough rice, sieves and riddles for cleaning rough rice, and improved scouring equipment and methods. The new equipment and methods have been adopted by the industry.

Standards for rough rice, brown rice, and milled rice have been revised, effective July 1, 1951, to include a milling yield test for rough and brown rice that will indicate the yield and quality of milled rice that may be obtained from a given quantity of rough rice or brown rice. Efforts are being made to develop a mechanical device to separate the broken kernels from the whole kernels in milled rice, that will be suitable for use in grading milled rice.

Other Research

An analysis made in cooperation with the Bureau of Plant Industry, Soils, and Agricultural Engineering and the Bureau of Entomology and Plant Quarantine, of the storage of shelled corn held by the Commodity Credit Corporation, in 72 large bins in 5 States with varying climatic conditions, revealed wide variations in the maintenance of quality. Defects in design and construction of some bins were found early in the study, which resulted in revisions in designs. A number of structural changes were made in Quonset buildings, and ventilation ducts were improved significantly. Corn placed in storage with more than 13 percent moisture was more liable to heating and insect damage than was drier grain. Deterioration in quality was greatest in the top third of the corn in the various bins. Quality was better in ventilated than in nonventilated bins.

Tests of ventilation and conditioning techniques made on CCC corn held at selected bin sites in Illinois and Indiana, disclosed that temperatures of corn in closed bins were uniformly higher than in ventilated bins, and condensation on the under sides of the roofs during cold weather was more pronounced in the closed bins. Quality of corn near the surface was better maintained in the ventilated than in the closed bins.

Experiments on the farm storage of grain sorghums from two crops in south Texas, financed in part by CCC funds, indicate that these grains should have a moisture content of less than 12 percent and be relatively free from foreign material for safe storage. Fumigants, properly applied, were successful in controlling insects. Airtight storage seemed unsatisfactory for grain sorghums that were to be sold for commercial use.

Analysis of farm storage in south Texas during 1 year, in cooperation with the Texas Agricultural Experiment Station, indicates that

the maximum moisture content of flaxseed in that area is about 7 percent; that wooden bins are more satisfactory in the area for storing flaxseed in bulk than metal bins; that air circulation is desirable during storage of flaxseed, especially in metal bins; and that temperatures above 90° F. over a prolonged period, cause a significant reduction in viability of flaxseed in storage.

Demonstration projects were operated in six States to promote the construction of adequate farm storage facilities and to encourage proper handling and conditioning of grain. In Maryland, Virginia, and Georgia, these demonstrations were begun with the 1949 harvests; in Michigan, North Carolina, and Tennessee, they were begun with the 1950 harvests. Emphasis was placed upon the conditioning of high-moisture corn, small grains, seeds, and other crops; and storage structures adapted to the respective areas were shown in use. Grains and other crops were dried for many farmers, field days were held, and large numbers of farmers visited the demonstrations. Reports indicate that the demonstrations resulted in many inquiries as to the construction of farm grain-drying facilities.

Work in cooperation with the Kansas Agricultural Experiment Station on a dry process for the milling of grain sorghums was nearly completed. Michinery for decortication of the grains was developed by the station because no suitable scouring machines were available.

LIVESTOCK, MEATS, AND WOOL

Numbers of meat animals on farms during the fiscal year 1951 reflected the continued upswing in the production cycle that started in 1948. Numbers of cattle and calves on farms January 1, 1951, approached the all-time high established in 1945, hog numbers were the highest since 1944, and sheep numbers advanced after reaching a record low in 1950.

An increased demand for meat was evident during the year, much of which can be attributed to higher consumer incomes and other demand stimuli. As a result, livestock, meat, and wool prices increased to record or near record levels, which made support operations unnecessary.

Price Support

The Agricultural Adjustment Act of 1949 makes the support of wool and mohair prices mandatory at levels between 60 and 90 percent of parity in order to encourage an annual production of approximately 360,000,000 pounds of shorn wool. The national average support price for the 1951 wool clip was 50.7 cents per pound, grease basis, or 90 percent of the March 15, 1951, parity figure. The support price for mohair was established at 53.4 cents per pound, which was 74.1 percent of the March 15, 1951, parity level. Market prices exceeded support levels throughout the year.

Hold-over wool stocks of approximately 465,000 pounds, representing the remainder of the wool stockpile acquired under various price-support programs of previous years, were sold. Selling schedules for wool purchased under previous programs had been suspended as of August 15, 1950, and were not reinstated under the 1951 program.

Therefore, sales of the remaining stocks on hand were made at prices specifically approved by the Department.

On December 5, 1950, an agreement was entered into between the Quartermaster General of the Army and the Commodity Credit Corporation under which the CCC was authorized to acquire, for subsequent transfer to the Department of the Army, 30,000,000 pounds of foreign wool, clean basis, as an emergency reserve. An amendment to Office of Price Stabilization regulations of February 20, 1951, relieved the CCC of observance of price-ceiling requirements with respect to wool purchased for the Department of the Army. At the request of the Quartermaster General, the purchase program was suspended on March 9, 1951. Under the procurement program, wool, totaling 7,857,753 pounds, clean basis, and valued at \$18,658,423, had been purchased at an average price of \$2.37 per clean pound.

A detailed study of the composition of the wool clip purchased under the 1946 program was completed and the results were published.

Under the Agricultural Act of 1949 prices of livestock sold for meat could have been supported at any level between zero and 90 percent of the parity price. Price-support programs were not considered necessary during the year, however, as prices paid to producers for hogs were maintained near parity and cattle and sheep prices were far above parity levels.

Procurement and Sales

Hold-over stocks of Mexican canned meat, totaling approximately 66.5 million pounds on July 1, 1950, were sold during the fiscal year. These stocks, made up equally of canned beef and gravy and canned meat and gravy, were acquired during the 1949 and 1950 fiscal years. Foreign governments, commercial firms, the Economic Cooperation Administration, and the Department of the Army purchased these holdings at an average price of 9 cents per pound for the meat and gravy and 21 cents per pound for the beef and gravy. No additional purchases of Mexican canned meat were made during the year.

Purchases of 17.7 million pounds of Mexican frozen beef at an average cost of 17 cents per pound were made against ECA requisitions for Greece. Mexican meat inspection is now recognized by the United States and canned meat and beef in brine are permitted entry into this country. This action should preclude the necessity of further purchases of canned or frozen meat in Mexico by the United States in support of the program to control foot-and-mouth disease.

During 1950-51, a total of 2,645,000 pounds of lard was purchased for Army shipment to Okinawa, and purchases for the State Department for Yugoslavia amounted to 60,710,000 pounds. Eighty-five lard contracts, valued at approximately \$11,395,000, were executed.

A purchase program for supplying smoked picnics for school lunch use was inaugurated in 1950. In all, almost 8.5 million pounds were purchased at an average cost of \$0.39 per pound, f. o. b. vendors' plants.

Specifications required that the product be distributed and consumed only after it had been given a special cure and smoke treatment. Bid prices covered a wide range and many offers were rejected because the price was excessive.

Defense Meat Board

The Defense Board for Meat, which serves as an interagency body, was established during the year. In addition to Government representatives, the Board includes consultants from the meat-packing industry. A primary function of the Board has been that of handling problems relating to meat procurement difficulties encountered by the armed services.

Regulatory Activities

Packers and Stockyards Act

On June 30, 1951, a total of 333 stockyards were posted, 4,775 active livestock market agencies and dealers were registered, and 1,563 poultry sales agencies were licensed under the Packers and Stockyards Act. In addition, 1,443 petitions for increased yardage of commission rates were received and disposed of. Formal proceedings were carried out in 170 cases, of which 50 percent were held over from 1949-50. Of these cases, 85 were disposed of and 85 were pending as the year ended. Bonds on file totaled about \$38,000,000, and represented a small increase over the previous year. Of 17 cases investigated for failure to observe the registration and bonding provisions of the Packers and Stockyards Act, 10 were concluded and 7 are awaiting legal action.

The number of packers subject to the provisions of title II of the act totaled 1,950, compared with 1,997 for the previous year. Responsible for the decrease was the consolidation of the list of packers. This made it possible to eliminate duplicate listing of a number of packers.

Continued requests for increases in yardage and commission rates resulted from higher operating costs of agencies and stockyards. Wage increases occasionally necessitated higher rates and charges. Supporting information accompanying requests for rate increases was carefully analyzed before conferring with petitioning stockyards and market agencies to determine rates to recommend to the Secretary as reasonable to all parties. Many requests for rate increases were not formally filed because petitioners were convinced in preliminary conferences that added charges were not warranted or that requests would not be accepted without challenge.

In 1950-51 all outlying posted markets were visited a minimum of six times. This number exceeded the number of supervisory visits made in earlier years. Field supervisors were given added responsibility in the handling of rate and trade practice investigations in order to utilize supervisory knowledge of market conditions. Currently this trade practice responsibility extends to 68 terminal stockyards and 265 livestock auction markets supervised under the Packers and Stockyards Act and the operations of commission firms and dealers operating at such markets. In addition, trade practice responsibility under the Packers and Stockyards Act covers packers engaged in interstate operations and live poultry commission merchants and handlers operating in designated cities.

Insecticide, Fungicide, and Rodenticide Act

Manufacturers of agricultural insecticides, confronted with critical shortages of some required raw materials, produced an increasing number of new chemicals during the year for use in economic poisons.

A number of these were released for general use after comprehensive testing, whereas others were rejected for want of sufficient information regarding their effectiveness against pests for which they were recommended and their reactions affecting public safety.

New formulations involving substitution of raw materials in proved insecticides made necessary many new registrations and amendments to existing registrations. Chemical and biological methods for the detection of 2,4-D were developed after serious injury to cotton resulted from the use of insecticides containing small amounts of 2,4-D-type weed killer. Adulteration appeared in the field of pine oil, cresylic acid, and quaternary disinfectants and a number of these ordinarily used for protection of public health were found to be of little value. In the field of rodenticides, many squill preparations were found to be weak and ineffective. Methods of determining the presence of the rodenticide, "warfarin," in prepared baits were perfected.

Original and supplemental registrations of economic poisons during the year totaled 6,858, thus bringing the number of registrations since the act became effective to 36,353. Examinations of samples of economic poisons declined 3 percent from 1950 to a total of 2,150, of which 1,318 or 61 percent had not previously appeared in interstate commerce. Of these, 466 were found to be so seriously misbranded, adulterated, or otherwise in violation of the law as to warrant citation or seizure. Seizure proceedings were initiated on 55 shipments which included 49 different economic poisons, and prosecution was recommended on 22 shipments against 7 different manufacturers. Letters of comment or criticism were sent registrants in regard to 13,080 labelings for products submitted during the year.

Market News

Wholesale meat trade reports, providing information on current prices by classes, weights, and grade selections for the Philadelphia market, were begun on November 1, 1950. Reports on stocker and feeder cattle and calves, showing number of head, average weights, and average prices have been made available from the Denver, Oklahoma City, and Fort Worth markets on a weekly basis. Statistical information similar to that tabulated at five other markets will be accumulated from the Denver, Oklahoma City, and Fort Worth markets for 1 year, after which it will be combined with the data from the five other markets to increase the size of sample of the stocker and feeder trade. That information serves as a guide for producers as to stocker and feeder cattle movements and price trends.

Arrangements were completed with production credit associations, banks, and other livestock lending agencies in Colorado, New Mexico, Wyoming, Nebraska, and Kansas to furnish information on prices and sale conditions of livestock sold for immediate or future delivery in connection with various lending operations. Reports from these agencies were mailed regularly to the Denver office where they were coordinated with information received from commission firms, livestock dealers, and livestock producers for release through normal market news channels on Friday of each week. Other reports, similar in nature, originated from Fort Worth, Tex. (limited to Texas); Billings, Mont. (for Montana, North Dakota, and South Dakota);

Spokane, Wash. (for Washington, Oregon, and Idaho); and San Francisco, Calif. (covering California, Nevada, Utah, and Arizona), and provided complete market coverage for the Western States.

Standardization and Grading

Meat

Complete revisions were made in the official United States standards for grades of dressed carcasses of beef, veal, calf, lamb, yearling mutton, and mutton and for the slaughter grades of cattle, vealers, calves, lambs, yearlings, and sheep. The effective dates for these revisions extended from December 29, 1950, through April 30, 1951. In accordance with the Office of Price Stabilization regulations, compulsory grading of all meats, except pork, was required, effective May 7. Approximately 300 additional graders were recruited and given training to provide properly qualified personnel to handle the increased requests of slaughterers for official grading following the effective date of the price-ceiling regulations on meat and meat products.

Seven supervisory conferences were conducted during the year for the purpose of analyzing revised grade standards for dressed carcasses of beef, veal, calf, lamb, yearling mutton, and mutton. In addition, opportunities were provided for supervisors and graders to become thoroughly familiar with the approved interpretation of all revisions adopted. Grading schools were used as a means of developing a unified application of the revised standards. Any deviation in the application of these standards was corrected immediately. Grading and standardization personnel served as judges at five livestock and meat shows of national scope and at four shows of regional importance. These appearances afforded opportunities to demonstrate grade standards in meetings with exhibitors interested in selecting and producing livestock in accordance with the standards.

A meat grading school held in Chicago afforded training in the application of Federal grade standards for instructors of meats in the agricultural colleges. Considerable effort was devoted to consumer educational programs in which the appropriate use of meat by grade and cut was stressed. A leaflet providing a nontechnical summary of identification of beef cuts was also prepared for distribution.

Wool and Mohair

During 1950-51 the wool standards laboratory made further advances in developing a practical, rapid, objective method of testing wool for fineness and other quality factors. A calibrated scale for use on the micronaire for determining the average diameter of greasy scoured wool samples was perfected. An improved method for determining uniformity in fineness of wool and wool top by using cross-sections of fibers photographed onto a 35-mm. film strip for use as a "comparator" was developed and copies of the film strip were distributed to agricultural experiment stations and other interested agencies.

Laboratory methods used to analyze small samples of wool were simplified by the development of a "rescour" technique for scouring grease wool samples to determine clean content. The "rescour" principle involves the use of an initial scouring, thorough drying, opening, blending, and picking the scoured wool, and a second scouring and

drying similar to the first. The small amounts of impurities remaining after this second scouring can readily be accounted for.

Proposed standards for official grades of mohair were developed on a tentative basis and approximately 40 sets were submitted to representative growers and members of the trade to obtain general agreement as to grades and their respective specifications. Suggestions for certain modifications have been received and will be considered before official United States standards for grades of mohair are promulgated.

Preparation and distribution of samples of grease wool, wool top, and mohair for demonstration purposes have continued in accordance with existing statutory requirements and Department regulations.

Prepared samples, representing grades of grease wool which show length, fineness, and fineness variations, have been adapted for use by wool growers interested in improving preparation of the wool clip for market.

A scourable branding fluid was developed after extensive testing under range conditions and in the scouring plant. A leading textile manufacturer claims that the use of the scourable paint reduces processing costs approximately 3 cents per clean pound of wool.

A core-sampling research project was completed during the fiscal year. Recommended changes in field equipment, methods, and techniques will result in greater accuracy and reliability in core sampling. Field testing with a $\frac{3}{8}$ -inch pressure coring tube was begun and initial shrinkage results showed several possibilities for future development.

Research

Research, under authority of the Research and Marketing Act of 1946, was continued.

Under this authority, further investigations into the use of color photographs to illustrate minimum grade requirements for carcass lamb, veal, and calf were made. The beef grading manual of color photographs was revised. Additional photographs, illustrating various grades of slaughter barrows and gilts were taken and a set of slides was prepared for use in discussions of the proposed slaughter swine and pork carcass standards. Models of the 5 slaughter grades were completed and arrangements for reproduction in volume have been made.

Demonstrations of proposed grade standards for slaughter barrows and gilts and the related carcass standards were conducted at 13 public markets at the request of marketing agencies, and numerous other demonstrations were conducted primarily for meat packers, producer groups, and educational workers. Other activities included cooperation with 6 State experiment stations on projects of regional and national scope which were concerned with the evaluation of livestock and meat grades.

Data were collected for the second year on the project designed to show the relation between the physical, chemical, histological, and organoleptic properties of beef animals and carcass grades. These data are being analyzed for indicated trends.

Fibers of both fall and spring series of the proposed mohair standards were measured in the Livestock Branch's wool standards laboratory and interlaboratory tests embracing six other laboratories were conducted with respect to fiber diameter of the spring hair.

Basic information resulting from these measurement studies will be used to establish diameter specifications for mohair standards.

During the year the wool standards laboratory reported conclusions drawn from a study of relationships existing between the length of fiber in grease wool and in the resultant top. It was shown that a direct relationship exists between the average length of nonstretched grease wool staples and average fiber length of finished top. This information will provide a basis for defining on an "inch" basis the length specifications for the principal grades of wool.

Also concluded during the year was a study of the relationship of fineness in grades of wool to the resultant card sliver, noil, and top for fine and half blood grades of wool. The information obtained will be used as a basis for developing diameter specifications for grades of grease wool and revisions in the specifications for top.

During the year additional research into methods of improving the marketing of wool clips was conducted on seven clips in various Western States.

Economic Analyses

Analyses of trends and economic problems affecting various segments of the livestock, meat, and wool industries were continued for the purpose of providing basic information essential to the determination of policy and programs which contribute to desirable levels of livestock, meat, wool, and mohair production, stable prices, and efficient marketing. Estimates were made regarding current and prospective livestock numbers, slaughter, and meat production. Cooperative activity with other Government agencies made necessary the preparation of estimates and forecasts by fiscal and calendar years, as well as by quarterly, monthly, and weekly periods. Increased attention was devoted to an analysis of prospects for balance between livestock numbers and feed supplies and the problem of arriving at and maintaining a desirable balance.

Statistical and economic information on livestock and wool was prepared for the United States delegation to the International Wool Conference that met in London, England, late in 1950, and for the United States delegation to the Conference on Tariffs and Trade which was convened by the United Nations at Torquay, England. PMA was represented at these conferences, as well as on the Wool Committee of the International Materials Conference held in Washington, D. C., beginning April 2, 1951. A continuous review is made of current material furnished by the Office of Foreign Agricultural Relations relating to foreign trade in livestock, meat, wool, and mohair. Analyses were made of the past, current, and probable future prices, and of marketings of livestock and livestock products between the United States and other countries. These analyses were particularly useful in justifying the need for certain export controls placed on wool, mohair, hides, leather, and other livestock products.

Revision and addition of factors for converting the weight of meat cuts and products to carcass weight equivalents were virtually completed by the end of the year. These conversion factors have been used by the OPS in connection with the granting of quotas for slaughter of livestock to fill military meat requirements.

Management Improvement

All livestock offices at National Stockyards, Ill., and the St. Louis insecticide office, were consolidated into one office at National Stockyards, Ill. Consolidation of the Sioux City, New York City, and Baltimore offices, scheduled for the 1952 fiscal year, will complete the unification of all livestock marketing functions within each market or in each city into one office operated as a single unit, with the exception of Montgomery and Nashville. These offices have cooperative arrangements with Alabama and Tennessee, respectively, which preclude the possibility of consolidating marketing activities there in the immediate future. In September 1950, all grease wool research and wool-testing activities other than those relating to the establishment of standards were transferred to the Denver laboratory.

Action has been started on the registration or copyrighting of a design for the Federal meat grade stamp. The design is a shield enclosing the grade name. With such a copyright the Federal Government will have a stronger basis for prosecuting those who attempt to imitate the grade stamps.

Information is now relayed from the livestock market news field office at San Francisco through a special teletype circuit arrangement financed by meat packers and others on the west coast. There is a possibility that similar services will be made available in other areas.

Efforts have been made to eliminate the duplication between the meat inspection and grading services performed by the United States Department of Agriculture and the inspection made by the Army in its procurement of meat and meat products.

POULTRY AND POULTRY PRODUCTS

Production of eggs, chickens, and turkeys continued at high levels during the fiscal year 1951. Civilian egg consumption during the calendar year 1950 was at the rate of 394 eggs per person, almost as high as the previous peak in 1945. During the first half of the calendar year 1951, it is estimated that consumers used eggs at the rate of about 410 per person per year. Chicken consumption continued at levels substantially higher than average, and turkey consumption reached an all-time peak of 5 pounds per person.

Price Support

General

During the first half of the fiscal year, egg prices were supported as a continuation of the support program begun in January 1950. The level of support was a national annual average farm price of 37 cents a dozen—approximately 75 percent of parity. This support program was authorized under the provisions of the Agricultural Act of 1949, which made support discretionary with the Secretary of Agriculture within a range of 0 to 90 percent of parity. The program was discontinued on December 31, 1950, and has not been resumed.

Because of a small reduction in the number of pullets raised, which resulted in a slightly reduced production of eggs, and because of increasing civilian and military requirements for eggs during the spring of 1951, egg prices received by farmers fluctuated between 90 and 100

percent of parity. This slight reduction in production obviously did not result in any shortage of eggs, and per capita consumption during the spring of 1951 continued at record levels.

During July 1950, turkeys were purchased by the Commodity Credit Corporation as the concluding phase of the 1949 turkey price-support program. No support operations were conducted during the year for chickens.

Support Operations for Eggs

Under the purchase program in effect during the first half of the fiscal year 1951, CCC purchased dried whole eggs packed in barrels or fiber drums at 96 cents per pound. Vendors selling to CCC were required to certify that they had paid producers 25 cents a dozen for eggs purchased at the farm or 27 cents a dozen for eggs delivered by the producer to the drying plant.

Contracts awarded provided for the purchase of 13,118,810 pounds of egg powder at a commodity cost of \$12,594,057.60. This quantity of powder is equivalent to approximately 1,311,881 cases of shell eggs. With the carry-over from the fiscal year 1950—that is, contracts awarded in June 1950 covering powder to be delivered in July 1950—of 9,850,632 pounds, or a shell-egg equivalent of approximately 985,063 cases, at a commodity cost of \$9,456,606.72, contracted deliveries in the fiscal year totaled 22,969,442 pounds, or a shell-egg equivalent of approximately 2,296,944 cases, at a commodity cost of \$22,050,664.32.

On July 1, 1950, the CCC inventory of dried whole eggs totaled 102,003,700 pounds, made up of 5,883,148 pounds of 1948 powder, 26,815,018 pounds of 1949 powder, and 69,305,534 pounds of 1950 powder. This quantity, with the 13,118,810 pounds purchased during the fiscal year, made available a total of 115,122,510 pounds. Since July 1, 1950, the inventory was increased by an additional 23,628 pounds applicable to the 1948 program and an additional 14,631 pounds applicable to the 1949 program owing to the 1-percent tolerance on contracts.

Disposition of Price-Support Eggs

Sales, commitments, and other dispositions of CCC dried egg stocks during the fiscal year totaled 76,906,567 pounds. This quantity, taken from a total availability of 115,160,769 pounds, left the CCC with an uncommitted inventory at the end of the 1951 fiscal year of 38,254,202 pounds, made up of 38,505 pounds of 1949 powder and 38,215,697 pounds of 1950 powder.

Disposition of price-support eggs during the fiscal year was made as follows:

<i>Program</i>	<i>Pounds</i>
Sales for export.....	5,747,374
Sales for domestic.....	174,150
Section 416 domestic donation program.....	7,343,689
Section 416 foreign donation program.....	27,182,101
Yugoslavia (FAO).....	9,951,800
ECA-British requisition.....	5,000,480
CCC-British contract.....	19,999,462
Sale of edible powder for food manufacturing purposes.....	1,011,406
Sale of inedible powder for animal feeding and other nonfood uses.....	484,465
Loss, shortage, or damaged.....	11,640
Total disposition.....	76,906,567

Support Operations for Turkeys

The Secretary of Agriculture announced on April 13, 1950, that there would be no price-support program on 1950 production of chickens (including commercial broilers) and turkeys but that the commitment to purchase 1949-crop turkeys still in storage in July 1950 would be adhered to.

In July 1950, purchases of turkeys under the program totaled 5,785,000 pounds at a commodity cost of \$2,417,000.

Disposition of Price-Support Turkeys

A total of 5,783,000 pounds of the frozen turkeys purchased in July 1950 were used in the school lunch program. The difference in total purchases and total sales is due to the fact that the purchase figure represents the contracted quantity, which was subject to a 1-percent delivery tolerance.

Data on price-support operations for eggs and turkeys are based on operating records of PMA rather than on fiscal records of the CCC.

Standards of Quality

During the fiscal year 1951, the marketing service work on poultry and related products has been performed on the basis of two work projects, "Standardization and Quality Conservation" and "Marketing Methods and Distribution." Much of this service has been performed by working with task groups of the Poultry Industry Advisory Committee and in cooperation with Federal and State agencies, various trade associations, and public health and consumer groups.

"Rules and Regulations Governing the Grading and Inspection of Poultry and Domestic Rabbits and Edible Products Thereof and United States Specifications for Classes, Standards, and Grades with Respect Thereto" were completely revised and rewritten as two separate regulations, one covering poultry and the other domestic rabbits.

Following the issuance of the regulations on January 1, 1950, considerable interest was developed particularly among public health and food and drug officials concerning the adequacy of certain of the provisions. Numerous contacts with these two groups, as well as with industry representatives, indicated the need for certain rather major changes in the regulations. A proposed revision of the regulations governing the grading and inspection of poultry was prepared and issued in the Federal Register on March 13, 1951, and several thousand copies of the proposals were provided members of the industry and all interested groups to give them an opportunity to present comments and suggestions.

In May 1951, a series of five regional meetings was held in key cities for the purpose of receiving further comments and suggestions and to explain the provisions and changes that were proposed. The regulations were finally formulated, published in the Federal Register, and became effective July 1, 1951.

In order to establish policies relating to cooperation between PMA and cooperating State agencies for the conduct of poultry inspection service on a Federal-State basis, "Instructions Governing the Administration of Poultry Inspection Where a Federal-State Service is

Desired," were prepared and published in the Federal Register and issued by the Department to become effective July 1, 1951. These instructions are based on authority contained in the grading and inspection regulations and clearly set forth the basis of Federal-State cooperation in rendering poultry inspection service. They outline the supervisory lines of authority, qualifications of Federal-State supervisors, including their duties, and describe the method of training and duties of State inspectors which are requisite in the service.

"Regulations Governing the Grading and Inspection of Domestic Rabbits and Edible Products Thereof, and United States Specifications for Classes, Standards, and Grades With Respect Thereto," were revised and issued as a separate document to become effective simultaneously with the poultry regulations on July 1, 1951.

In cooperation with the Poultry Section of the Bureau of Animal Industry and the Bureau of Plant Industry, Soils, and Agricultural Engineering, recommended standards were developed for scoring and measuring opened-egg quality. A number of devices for measuring and calculating egg quality, including a pictorial score chart, were developed. The techniques recommended in these standards, when properly applied, will provide a means whereby the application of the standards for quality of eggs as they appear before the candling light may be established on a more accurate and uniform basis.

In a cooperative project with the Poultry Industry Egg Quality Committee and the Poultry Section of BAI, an initial survey of egg quality was conducted in connection with three official egg-laying tests conducted in different sections of the country. The purposes of this survey were (1) to test the efficacy of methods developed in connection with the recommended standards for scoring and measuring egg quality; and (2) to provide information in regard to the level of quality of eggs being produced by much of the country's foundation breeding stock. This survey was requested by the poultry industry and most of the expenses of the survey were defrayed by the industry.

Representatives of PMA participated in the conduct of the annual regional egg-grading and egg-marketing school sponsored cooperatively with the Northeastern Poultry Producers Council and the University of Rhode Island. The school was held in June 1951 at Kingston, R. I.

Educational Materials

To supplement the illustrative material on standards and grades for eggs and poultry, numerous color photographs were taken of many types of abnormal and inedible shell eggs, as well as photographs of the four standards of quality for brown shell eggs, to be used on color charts and slides. A limited number of egg quality slides have been distributed on a cost basis to State educational agencies. This set of color slides is now being revised and enlarged to include a much larger number of different types and qualities of eggs. Color photographs were also made of a series of eggs illustrating the various qualities in broken-out form. From these photographs a chart, illustrating 12 eggs within the 4 quality standards, was developed and submitted for printing in color.

A set of approximately seventy 35-mm. color slides illustrating the various qualities and grades of poultry are in process of preparation

for distribution on a cost basis to members of the industry and educational agencies.

A farmers' bulletin, entitled "Marketing Farm Poultry," was completely rewritten, and at the end of the year was in the process of being published.

A handbook, entitled "Recommended Specifications for Standard Packs, Containers, and Packaging Materials for Poultry and Poultry Products," has been completed and is in process of application.

A packaging exhibit, depicting the evolution of poultry and egg packaging during the past 50 years was organized and set up at the Fiftieth Exposition of the Northeastern Poultry Producers' Council in Harrisburg, Pa.

An educational program designed to aid in the speedy and efficient adoption of new-style egg cases, fillers, and flats by egg-case users, was successfully carried on, as illustrated by the fact that the change-over from old standard egg cases, fillers, and flats was about 70 per cent completed at the end of the first year.

Research

Research carried on under the Research and Marketing Act of 1946 has focused attention on problems throughout the industry. Activity during the year dealt with such widely separated phases of marketing as problems encountered in marketing hatching eggs and baby chicks to those encountered in aiding industry in improving retailer merchandising practices.

Marketing research on eggs included studies of producer practices affecting quality, assembly costs, quality change during storage, and shell treatment to preserve quality. Attention was given to price history, shrinkage and mortality in shipping poultry to market, poultry grades and grading, processing costs, plant sanitation, and consumer response to graded poultry. These activities were carried out in cooperation with the State agricultural colleges, industry groups, and other Federal agencies.

Work was initiated to determine the merits of retailer training courses as a means of getting modern and efficient methods more widely applied in retailing poultry products. Under this program, more than 1,500 retailers received training in classes held in 25 cities located in 8 States. Thus far, only a small percentage of retailers have been reached, but wide interest in the program has resulted in spreading the influence of this program far beyond those reached in classes. Nearly 5,000 interested people have been directly contacted. These either came as visitors to training schools or for viewing demonstrations held to familiarize groups with the program. In addition to the courses, instructors have appeared on eight broadcasts and five television shows.

Previous studies indicating that two-thirds of the eggs delivered to first receivers were below U. S. Grade A quality and that approximately one-eighth of the eggs were stained and dirty, pointed out the need for studies of producer practices. A preliminary report of such work indicates that producers who followed six recommended practices marketed 91 per cent Grade A eggs, whereas those who followed only one or two of the recommended practices marketed 57 per cent

Grade A eggs. Those who followed six recommended practices marketed only 5 percent of stained and dirty eggs, whereas those who followed only one or two of the practices marketed 20 percent.

An analysis of data for 180 egg-collection routes in 10 Midwestern States is under way. This will reveal the time and travel required to procure eggs from producers. A second phase of this study includes a breakdown of labor and truck costs. This work will focus attention on the type of route activity and costs offering the greatest opportunity for decreasing costs of assembling eggs.

A report was released on "Changes in Egg Quality During Storage." This points out that eggs of high quality deteriorated at a less-rapid rate than those of low quality and that eggs stored early in the storage period declined less in quality than those stored late.

An appraisal of egg treatments to reduce deterioration showed that the egg shells coated with oil were superior to naturals and that those thermostabilized at 130° to 136° F. for 16 minutes yielded between 80 and 85 percent Grade A eggs after 7½ months of storage, whereas the oil-treated lots yielded only 38 percent Grade A. The research also indicated promising results when the thermostabilization period was shortened to 8 minutes and the temperature raised to 144°.

Research on pasteurizing liquid whole eggs was conducted under commercial plant conditions, not only to determine the conditions under which the greatest number of bacteria detrimental to the end product could be killed, but also to develop pasteurization procedures that would be practical for use by industry. It was found that pasteurization at 140° F. was the most practical "flash" temperature from a plant-operating standpoint. A holding period of 2 minutes at that temperature had shown marked reduction of bacteria but did not eliminate certain types. An extension of the holding time to 3 minutes resulted in the killing of all bacteria of the *Salmonella* group. Preliminary tests showed that pasteurization impaired to some extent certain functional values.

An analysis of poultry-marketing data revealed the nature of the rapid changes taking place and will serve in guiding industry in making sound adjustments.

Some of these changes are:

1. Increasing tendency to ship poultry from country points to the consuming markets in dressed rather than in live form.
2. Tendency of producers in the Central States to find new outlets for farm chickens as a result of the rapid expansion in the production of commercial broilers.
3. The gradual decline since 1930, in parts of the United States, in the percentage of poultry sold as farm chickens; and the increasing importance, on the other hand, of commercial broilers and turkeys.
4. Approximately 80 percent of the poultry sold off farms bypasses the four large terminal markets of New York, Chicago, Philadelphia, and Boston.

Research on poultry marketing in the New York and Chicago markets has resulted in two reports—"Poultry Prices on the New York City Market, 1875-1949," and "Shrinkage and Mortality in Shipments of Live Chickens Received at the New York City Live Poultry Terminal, 1949-50." These reports may be obtained from Cornell University, with which PMA cooperated in making the studies.

Shrinkage and mortality amounted to 4.4 percent of the shipping point weights. Shrinkage of live birds was 23 times as important as mortality. Weight per coop appeared to be the most important factor, while weather conditions, weight per load, and distance shipped were associated factors. An analysis of the sales and purchases of poultry, now under way, will provide facts on origin and nature of supplies, outlets, and the nature of product taken, and a basis for appraising the adequacy of the market news service. Another phase of work is concerned with methods of operation and variations in costs of processing plants and of commission merchants.

In cooperation with industry, work was conducted in a large poultry processing plant with the view to increasing the holding time of ready-to-cook poultry and to improve plant sanitation. The employment of mechanical washing as the last operation on the poultry-dressing or -evisceration line brought about a marked reduction in bacterial population on the body surfaces of the birds. When 20 parts per million of available chlorine was incorporated in the plant processing water and mechanical washers were employed, there were reductions as high as 97 percent in the bacterial population on the body surfaces of poultry. In addition, chlorination of the plant water reduced the bacterial contamination at every point of contact on equipment, on working surfaces, and in pipe lines; and it prevented the development of slime, reduced odors in the plant, and cut the plant clean-up time by one-third.

The nature of defects causing poultry to fall below Grade A has been given attention at the processing level in Utah and at the retail level in California. Preliminary indications are that approximately the same proportion of such defects are traceable to each of the production and processing segments of the industry. A study is being conducted in California in an effort to appraise consumer response to the sale of chickens of different grades and labels.

A report was released, entitled "Problems of the Hatching Egg Industry in the Northeast." This exploratory study reveals the extent to which concentrated broiler producing areas must go to other areas for a large part of their hatching-egg and baby-chick needs, what is the cost of assembling and shipping to destination, and the extent of losses in transit.

Production and Marketing Analyses

Work was continued during the year in analyzing trends and problems in various segments of the poultry industry. The objective is to assist producers and marketing groups in achieving a more stabilized production and consequently a more stabilized price pattern for poultry-industry production, and to help bring about increased efficiency and economy in marketing. Information developed in this work has been made available to the poultry industry, other branches in the Department, other Government agencies, Members of Congress, and members of the trade.

SUGAR

PMA's over-all program for sugar is authorized by the Sugar Act of 1948, the Commodity Credit Corporation Charter Act, and the

Research and Marketing Act of 1946. Operations under the Sugar Act are aimed at providing domestic household and industrial consumers with adequate supplies of sugar at reasonable prices which will, at the same time, fairly and equitably maintain and protect the welfare of the domestic sugar industry.

The total sugar requirements of consumers for each year are estimated by the Secretary of Agriculture. Quotas based on this estimate regulate the entry of sugar into the continental United States from off-shore areas and the marketing of sugar by continental areas. Payments are made to domestic producers of sugarcane and sugar beets who do not market in excess of specified quantities, who meet certain standards with respect to child labor, who pay wages deemed to be fair under the standards established by the act, and (in the cases of processor-producers) who pay other producers for sugarcane and sugar beets, prices that are determined by the Secretary to be fair and reasonable. Under the CCC Charter Act, sugar is procured by the CCC under special and emergency conditions for other Government agencies. Under the Research and Marketing Act of 1946, research is conducted on the marketing of sugar and related products.

Consumption Requirements, Prices, and Quotas

Following the outbreak of hostilities in Korea, sugar prices, particularly in the world market, increased sharply. The price of Cuban world sugar, f. a. s. Cuba, increased from 4.30 cents per pound on July 1, 1950, to 5.90 cents by the end of the month. By comparison, Cuba quota sugar for the United States market, f. a. s. Cuba, rose from 4.85 cents per pound on July 1 to 5.20 cents by the end of the month. Domestic distribution of sugar in July 1950 amounted to 1,188,000 short tons, an increase of 443,000 tons over the same month in 1949, largely as a result of panic buying and concern over the adequacy of the remaining supply of sugar. These conditions necessitated an increase in the consumption-requirement estimate—which on January 1, 1950, was 7,500,000 short tons, raw value—to 7,850,000 on July 19, 1950, and a further increase to 8,700,000 tons on August 29, 1950.

Both distribution and prices were relatively low in the first 4 months of 1951. However, domestic distribution in May was considerably higher than in the same month of 1950 and prices advanced once more, world prices increasing much more than domestic prices. As a result, the 1951 consumption estimate of 8,000,000 tons was increased to 8,250,000 tons effective June 13.

The sugar market during the fiscal year was characterized by the disparity between world and domestic prices. Historically, domestic prices have been higher than world prices. However, Cuban world prices advanced from 4.30 cents on July 1, 1950, to 6.95 cents by the end of the fiscal year, whereas the domestic price of raw sugar, duty paid, was 5.85 cents at the beginning of the fiscal year and 6.40 cents at the end of the year. World prices reached a high of 8.05 cents in June 1951, while the highest level of domestic prices was 6.80, also in June. From July 1, 1950, to June 30, 1951, refined prices in the United States market rose from 7.70 cents per pound to 8.75 cents. Prompt action in revising consumption estimates reduced the severity of the effect of world market conditions on domestic prices. Follow-

ing initial price-control action early in 1951, sugar was removed from Office of Price Stabilization control and responsibility for preventing unwarranted price increases was given to the Department of Agriculture because of the past effectiveness of the Sugar Act in maintaining fair and reasonable prices for sugar.

Statutory quotas are established by the Sugar Act for the five domestic sugar-producing areas—mainland cane, domestic beet, Hawaii, Puerto Rico, and the Virgin Islands—and for the Republic of the Philippines. The difference between the sum of these quotas and the amount of the consumption estimate is divided between Cuba and foreign countries (other than Cuba and the Republic of the Philippines) on a basis of 98.64 and 1.36 percent, respectively. In addition, when one area cannot fill its quota, the unfilled portion (commonly known as deficit) is prorated to other areas which can supply the sugar.

As a result of the large increase in consumption requirements, announced in August 1950, Cuba was unable to supply the entire quantity prorated. Accordingly, a portion of the additional quota allocation which Cuba normally would have supplied was reallocated to domestic areas as follows: Puerto Rico—150,545 tons; domestic sugar beet area—100,000 tons; Hawaii—98,594 tons; mainland cane sugar area—46,861 tons; Virgin Islands—4,000 tons. The unfilled portion of the quota for foreign countries other than Cuba and the Republic of the Philippines was reallocated in September to those countries in this group which were able to supply the sugar. The Virgin Islands received an additional quota of 1,000 tons in December as a result of a deficit in the quota for the domestic sugar beet area. A deficit of 200,000 tons for the Republic of the Philippines was declared in the initial 1951 quota determination.

Basic and final adjusted quotas for the calendar year 1950 and at the end of the fiscal year 1951 are shown in table 5.

TABLE 5.—*Basic and adjusted sugar quotas, by production areas, calendar years 1950 and 1951*

Production area	Final quotas calendar year 1950		Quotas as of June 30, 1951	
	Basic	Adjusted	Basic	Adjusted
	<i>Short tons, raw value</i>	<i>Short tons, raw value</i>	<i>Short tons, raw value</i>	<i>Short tons, raw value</i>
Domestic beet-sugar area.....	1, 800, 000	1, 899, 000	1, 800, 000	1, 800, 000
Mainland cane-sugar area.....	500, 000	546, 861	500, 000	500, 000
Hawaii.....	1, 052, 000	1, 150, 594	1, 052, 000	1, 052, 000
Puerto Rico.....	910, 000	1, 060, 545	910, 000	910, 000
Virgin Islands.....	6, 000	11, 000	6, 000	6, 000
Republic of the Philippines.....	982, 000	532, 000	982, 000	782, 000
Cuba.....	3, 403, 080	3, 430, 580	2, 959, 200	3, 149, 200
Other foreign countries.....	46, 920	69, 420	40, 800	50, 800
Total.....	8, 700, 000	8, 700, 000	8, 250, 000	8, 250, 000

Wage and Price Determinations

Determinations of fair and reasonable wage rates were issued for each of the five domestic sugar-producing areas. These rates covered approximately 54,000 workers in the mainland cane area (Louisiana and Florida); 111,000 in the sugar-beet area; 148,000 in Puerto Rico; 13,750 in Hawaii; and 1,000 in the Virgin Islands.

Changes in basic wage scales were made in Florida, Louisiana, the sugar-beet area, and in the Virgin Islands. In Florida, basic time rates for unskilled workers were increased to 50 cents per hour. Earnings of such workers were significantly higher, however, because a considerable part of the work is performed on a piecework basis. In Louisiana, the basic wage was increased 20 cents per day for work in the production, cultivation, and harvesting of sugarcane. In this State, the wage-price escalator provision of the determination also resulted in effective increases up to 13 cents per day in the harvesting wage, while production and cultivation basic wages increased as much as 20 cents per day.

In the sugar-beet area, two determinations were issued, one for the sugar-beet region of the State of California, southwestern Arizona, and southern Oregon, and the other for the remainder of the sugar-beet area. In the former, the basic hourly rates were increased 5 cents above the rates for the previous crop and provision was made for a reduction in wages in those cases where handicapped workers are employed. In the wage determination applicable to the remainder of the sugar-beet area, total piecework wage rates per acre for cultivation and harvesting operations were increased about \$1.83 per acre over the 1950 rates, or about 4.5 percent. In these regions, basic time rates remained the same as for the previous crop. Time rates in the Virgin Islands increased from 25 cents per hour for all kinds of work to 30 cents for unskilled workers, 33 cents for workers who spray weeds with chemicals, 40 cents for tractor and truck operators, and 50 cents for operators of mechanical loaders.

Increases in wages occurred in Puerto Rico and Hawaii because of the operation of wage-price escalator provisions of the wage determinations. In Puerto Rico, this resulted in wage increases above the basic rates, ranging from 90 cents to \$1.215 per day, and in Hawaii it resulted in increases up to as much as 7.5 cents above the basic "floor" wage of 80 cents per hour.

During the fiscal year, fair-price determinations were issued for all domestic sugar-producing areas except Hawaii. Changes occurred in determinations for Puerto Rico, the Virgin Islands, Florida, and Louisiana. In Puerto Rico, major changes included a revision of the settlement scale; a revision in the sharing of net returns from blackstrap molasses; and the establishment of separate methods of settlement for sugar within and not within the marketing allotments. The determination for the Virgin Islands contained the following basic changes: The adoption of a sliding settlement scale for sugarcane based upon the yield of sugar to replace the "flat-rate" sharing basis; enforcement of the requirement that settlements be based on the quality of sugarcane delivered by individual producers; the estab-

lishment of separate methods of settlement for raw sugar within and not within the statutory quota of the Virgin Islands; and the adoption of a uniform settlement period.

The only change made in the price determination for Florida was the addition of a requirement that conversion of actual sugarcane to standard sugarcane be made on the basis of the average sucrose content of sugarcane delivered by a producer during the basic pricing period. In Louisiana, major changes included an increase in the basic price for standard sugarcane of \$0.015 for each 1 cent of the average price of raw sugar; the elimination of trash tolerance; and a revision of the method of testing the sucrose and purity of sugarcane. No change was made in the price determination for the sugar-beet area. The determination for Hawaii has been delayed pending further study of proposed major changes in the adherent planter system of the area.

Studies of the returns, costs, profits, and related data of producing and processing sugarcane in Puerto Rico, the Virgin Islands, Louisiana, and Florida, initiated during the previous fiscal year, were completed. To provide data necessary for the effective administration of the Sugar Act of 1948 and for planning defense activities, a study of the margin requirements and package differentials of the domestic sugar refining industry was commenced in May 1951. This study will cover the operations for the years 1948 through 1950 of all refiners of granulated sugar (except three concerns which produce refined sugar from their own production of raw sugar) and a case study of one of eight firms which process liquid sugar either primarily or exclusively. Other studies of major importance initiated during the fiscal year included studies of labor performance in the sugar beet area of Louisiana, and a study of the methods of settlement for sugarcane in Puerto Rico.

Payments to Producers

Under title III of the Sugar Act of 1948, conditional payments approximating \$69,229,000 were made to about 88,000 sugar beet and sugarcane producers in the mainland beet and cane sugar areas, Hawaii, Puerto Rico, and the Virgin Islands who qualified by meeting certain standards with respect to child labor, wage rates, proportionate shares established for the farms, and in the case of processor-producers, payment of fair and reasonable prices for sugar beets or sugarcane purchased from other producers. Although most of these payments were made for actual production from the 1950 crop, payments amounting to about \$1,914,000 were made to compensate growers in part for crop loss resulting from specified causes.

Sugar production from the 1949-50 crop in Puerto Rico and the 1950 crop in the mainland beet sugar area reached record levels, totaling 1,298,645 and 2,006,000 (estimated) short tons, raw value, respectively. Florida's 1950-crop sugar production also reached an all-time high of 105,000 tons, while the production of sugar from Louisiana's 1950 cane crop was the second largest on record, totaling approximately 457,000 tons. Sugar production from the 1950 cane

crop of the Virgin Islands reached an estimated 12,000 tons, the largest since 1919, while Hawaii's 1950 crop production was also large, totaling 961,000 tons.

A revised method for determining normal yields of sugar and eligibility for acreage abandonment and crop deficiency payments for sugarcane farms in Hawaii was issued on July 7, 1950. The principal changes provide for the use of a 5-year moving base period, so as to reflect current yields, establishing normal yields, and the use of a simplified formula to make normal yield computations.

The determination of normal yields and eligibility for abandonment and deficiency payments for farms in Puerto Rico was also revised during the fiscal year. The revised determination, issued September 21, 1950, also provides for the use of a moving base period to reflect current yield changes, thus affording a sounder basis for the computation of any acreage abandonment or crop deficiency payments. For the 1950-51 crop year, the base period will consist of the next preceding four crop years rather than the next preceding five crop years, because the 1945-46 crop was affected by conditions resulting from the war and by unusual weather conditions. Beginning with the 1951-52 crop year, the base period will cover the next preceding five crop years.

An amendment to the determination of sugar commercially recoverable for the mainland cane sugar area was issued on September 15, 1950, which eliminated all tolerance for trash in sugarcane from the recovery rates applicable to farms in Louisiana. This action reflected a revised definition of trash under the 1950 fair price determination.

The estimated total payments to be made to producers in the several domestic sugar-producing areas, the part of these payments which relates to acreage abandonment and crop deficiencies, and the number of payees for the 1949 and 1950 crop years are shown in table 6.

TABLE 6.—*Payments under the Sugar Act of 1948 and number of payees, in the several sugar-producing areas, crop years 1949 and 1950*¹

Payment and payee	Domestic beet- sugar area	Mainland cane- sugar area	Hawaii	Puerto Rico ²	Virgin Islands
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Payments on sugar beets or sugarcane:					
1949-----	25,844,000	6,935,000	8,438,000	17,668,000	66,000
1950-----	32,862,000	8,345,000	8,471,000	17,467,000	170,000
Abandonment and deficiency payments:					
1949-----	738,000	152,000			
1950-----	1,350,000	500,000		64,000	
Total payments:					
1949-----	26,582,000	7,087,000	8,438,000	17,668,000	66,000
1950-----	34,212,000	8,845,000	8,471,000	17,531,000	170,000
Payees:	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
1949-----	45,750	9,735	1,339	15,300	554
1950-----	60,000	10,500	1,219	16,181	550

¹ Preliminary.² 1948-49 and 1949-50 crops.

Sugar Purchases

In the fiscal year 1951, CCC purchased approximately 555,000 short tons of Cuban raw sugar at 5.38 cents per pound, f.a.s. (free alongside ship) Cuba basis. This purchase was made in order to help stem the rapid increase in prices, the disappearance of Cuban raw sugar into the world market, and as a means of insuring an adequate supply of sugar for the United States for the balance of 1950 and early 1951.

CCC assigned its rights and obligations under such contract to United States refiners for approximately 428,000 short tons. CCC also assigned 104,200 short tons of sugar to the United Kingdom. Of the remaining quantity, approximately 711 short tons of refined sugar were shipped to Greece and approximately 22,000 short tons of raw sugar were shipped to Yugoslavia, under the Mutual Defense Assistance Act.

During the early part of the fiscal year, the balance (approximately 11,800 short tons) of the raw sugar purchased in the previous year by CCC from 27 Puerto Rican producers was shipped to Germany under the ECA program.

In June 1951, CCC made a final settlement with the Cuban Sugar Stabilization Institute with respect to claims which arose under the wartime sugar-purchase programs. The settlement was made on the basis of a compromise agreed to between the Institute and CCC.

International Sugar Agreement

Representatives of the United States and other major sugar-producing and consuming countries met in London in June 1950 to consider a revised International Sugar Agreement to replace the International Agreement Regarding the Regulation of Production and Marketing of Sugar signed at London in 1937.

The primary object of the 1937 agreement was to establish and maintain an orderly relationship between the supply and demand for sugar in the world market in a manner equitable to both producer and consumer, and in this way to eliminate the wide price fluctuation injurious to both producers and consumers and to raise world sugar prices which in 1936 had been but little above those at the depth of the depression. The provisions of the 1937 agreement generally were suspended shortly after the outbreak of World War II.

Because of the fear that a burdensome surplus of sugar would again develop and result in depressed market conditions, proposals were made that a new agreement be negotiated for the purpose of assuring sugar supplies to importing countries at equitable and stable prices; increasing world sugar consumption; and maintaining purchasing power in the world markets of those countries whose economies are largely dependent upon sugar exports.

A draft of a new International Sugar Agreement was prepared in 1950 by the representatives of the various countries concerned. Final agreement on the provisions to be included in the new agreement was not reached and the terms of the agreement are subject to further negotiation. The outbreak of the Korean war dispelled temporarily the concern over possible sugar surplus accumulation.

Marketing Research

A report entitled "Competitive Relationships between Sugar and Corn Sweeteners" has been completed and is being printed. An analysis of information collected from industrial users and other sources in regard to sweetener usage is presented in the report. Trends and shifts in the use of sugar, dextrose, and corn sirup are shown as well as the influence on the user's choice of type of sweetener of such factors as price differentials, relative physical and chemical properties of the various sweeteners, and Federal and State laws pertaining to the use of these sweeteners in processed foods. The reporting of quantities of sugar and dextrose currently being used by the various consuming industries developed in connection with the research done on this project is being continued on a permanent basis. This information is supplied quarterly by primary distributors of these products and covers all of the dextrose and approximately 97 percent of total sugar distribution within the continental United States.

Standards for grades of sugarcane sirup, edible molasses, refiners' sirup, and liquid sugar were developed in the fiscal years 1949 and 1950 with funds made available under the Research and Marketing Act. Notices of rule making regarding the issuance of proposed standards for sugarcane sirup, edible molasses, and refiners' sirup were published in the Federal Register during the fiscal year 1951. After consideration of all recommendations of interested parties, United States Standards for Grades of Sugarcane Sirup have been promulgated. Relevant matters in connection with the proposed standards for the other products are still under review. During the year, the standards were demonstrated to producers and distributors and tested under trade conditions in order to determine their workability in actual commercial practice. Also, work was initiated to ascertain the type of inspection and grading service which could be used most efficiently in inspecting and grading these products.

A report entitled "The Marketing of Sugarcane in Puerto Rico" has been published as a part of a project on marketing practices in the domestic sugarcane areas. This report presents an analysis of marketing practices in Puerto Rico and the major factors having an economic effect on the marketing of sugarcane in that area. It is recommended in the report that changes be made in the method of settlement for cane between processors and producers and that certain undesirable marketing practices be eliminated in order to improve marketing efficiency.

Work was undertaken in the fiscal year 1951 to develop and test methodology and techniques for collecting and reporting molasses market news. A weekly market news report was instituted during the fiscal year on an experimental basis. The report covers cane blackstrap molasses, beet molasses, and citrus molasses. It is planned to expand market coverage to include edible molasses and sugarcane sirup in the fiscal year 1952. This work has aided greatly the carrying out of defense responsibilities with respect to molasses.

A report has been prepared and is nearing publication on the marketing of industrial molasses. The report will contain analyses of the present and prospective market for industrial molasses, market movements of molasses to various end users, marketing costs in-

volved, and marketing practices most effective in decreasing marketing costs and increasing feed molasses consumption. Statistics will be included on the amount of molasses received from each supply source over a period of years, the utilization of molasses in various industrial processes, and molasses prices.

In connection with research on the marketing of raw sugar and refined sugar, emphasis has been placed on projects which would provide information helpful in the emergency period in guiding policy decisions and which would provide a basis for control programs if they become necessary. Work is under way in summarizing all available data on sugar marketings and on price movements. Continued special attention is being given to the marketing of raw and refined sugar in bulk and liquid form and the possibility of reducing marketing costs by expansion of these relatively new marketing methods.

TOBACCO

Tobacco production in 1950 totaled 2,056,000,000 pounds, as compared with the 1940-49 average production of 1,814,000,000 pounds. Prices of the major types were supported throughout the fiscal year, but support operations were carried on at no net loss to the Commodity Credit Corporation. Federal inspection and market news services were available free of charge to producers on all tobacco sold at auction.

Price Support

The tobacco price-support program was made available to growers of United States and Puerto Rican tobacco through 20 grower cooperative associations operating under agreements with Commodity Credit Corporation. Loans on 149,589,000 pounds of tobacco totaled \$75,025,000 during the fiscal year. About 7 percent of the 1950 crop was placed under loan as compared with 9 percent of the 1949 crop.

The accompanying tabulation shows the kinds of tobacco supported, the percent of parity at which supported, and the cents-per-pound average loan level:

Kind of tobacco:	1950 crop support level (percent of parity)	1950 crop support level (cents per pound)
Flue-cured 11-14	90	45.0
Fire-cured 21-24	¹ 75	34.3
Burley 31	90	45.7
Maryland 32	86	48.6
Dark Air-cured 35-37	¹ 66 $\frac{2}{3}$	30.5
Pennsylvania Filler 41	86	25.2
Ohio-Miami Filler 42-44	86	23.6
Puerto Rican Filler 46	86	29.0
Connecticut Broadleaf 51	86	49.0
Connecticut Havana Seed 52	86	49.5
New York and Pennsylvania Havana Seed 53	86	25.5
Southern Wisconsin 54	86	24.1
Northern Wisconsin 55	86	30.0

¹ Percent of burley rate.

Export Operations

No specific export programs were carried on during the fiscal year 1951. However, about 5 million pounds of 1946 crop fire-cured and

dark air-cured tobacco pledged to CCC as collateral for price-support loans were sold for export at reduced prices. Such sales were limited to countries which have not imported these kinds of United States tobacco in recent years.

Adjustment Operations

Marketing quotas were in effect for the 1950 crops of burley, flue-cured, fire-cured, dark air-cured, and Virginia sun-cured tobacco after approval by farmers voting in referendums. More than 90 percent of the farmers voting favored quotas. In addition to the above kinds, quotas were approved on the 1951 crop of cigar-filler and binder tobacco (types 42-55) but were disapproved by the growers on the 1951 crop of Pennsylvania cigar-filler (type 41) and Maryland tobacco.

Quotas as approved by the growers on the 1951 crops, together with the total of the acreage allotments established for individual farms, were as follows:

Kind of tobacco:	National quota (pounds)	Acreage allotments (acres)
Burley.....	580, 000, 000	472, 082
Flue-cured.....	1, 297, 000, 000	1, 119, 082
Fire-cured.....	63, 100, 000	56, 918
Dark air-cured.....	30, 200, 000	26, 640
Virginia sun-cured.....	4, 042, 000	4, 348
Cigar filler and binder.....	70, 900, 000	47, 341
Total.....	2, 045, 242, 000	1, 726, 411

Inspection

Inspection service was maintained on all established auction markets—a total of 170—during the fiscal year. The volume of tobacco inspected totaled nearly 2,020,000,000 pounds—100 percent of all tobacco sold at auction. In addition, approximately 141,600,000 pounds of tobacco in hogsheads were inspected for cooperative marketing associations in the auction areas. A total of 20,621,000 pounds of cigar leaf was also inspected, as follows: Wisconsin, 2,014,000 pounds; Connecticut-Massachusetts, 3,775,000 pounds; Puerto Rican, 9,536,000 pounds; Ohio, 2,575,000 pounds; and Pennsylvania, 2,821,000 pounds.

Technical Assistance and Training Activities

To improve the preparation of tobacco for market, PMA demonstrated proper techniques to several thousand tobacco growers located in all tobacco-growing areas. Training and refresher courses and grading tests for inspectors were held to increase the efficiency of the inspection service. Four short courses in tobacco standards and specifications as well as in preparation of tobacco for market were held at State colleges. Six courses in tobacco standards and specifications were held for members of the trade.

Market News

Market news was furnished to all auction markets. The service was provided for 13 types of 898 warehouses located on 170 markets in 12

States. A total of 1,048 different reports (daily, weekly, and seasonal) were prepared, and 976,600 copies distributed. About 80 percent of these were furnished directly to growers for use at the time their tobacco was offered for sale, and the other distribution was made to newspapers, radio stations, members of the trade, and others. (Total distribution was about 200,000 copies less than that of the previous season, owing to the fact that, for most types, daily price reports were discontinued this year.) Coverage was increased to 32 additional newspapers and 39 additional radio stations. Four market reviews—comprehensive compilations of market, price, and related information—were issued at the close of the season for the 4 classes of tobacco, and 8,300 copies were distributed.

Market news releases were furnished from the two permanent offices at Raleigh, N. C., and Louisville, Ky., and seven temporary offices were set up at points in the various belts. The annual market reviews were prepared in Washington.

Cooperative agreements covering market news were continued with the State departments of agriculture of North Carolina, Virginia, Tennessee, Kentucky, West Virginia, and Maryland.

Tobacco Stocks and Standards Act

The Tobacco Stocks and Standards Act of 1929 requires that a quarterly report be made of stocks of leaf tobacco owned by dealers and manufacturers. This information, released in the Tobacco Stocks Reports, was based on schedules received from about 1,200 dealers and manufacturers in the United States and Puerto Rico.

The Annual Report on Tobacco Statistics for 1950, also required by the Tobacco Stocks and Standards Act, was released in December 1950. This publication is a compilation of the most frequently used statistics relating to tobacco.

Activities Under the Research and Marketing Act

Extensive chemical investigations were conducted on Old Belt Flue-cured (type 11) and Puerto Rican cigar filler (type 46) tobaccos in an effort to determine the relationship between the characteristics of the grades of these two tobacco types and their chemical composition. It was found that certain qualities and characteristics are related definitely to the sugar, protein, nitrogen, and oxalic acid contents of these tobaccos. Results obtained in these studies may form the basis for revision of old grades and the formulation of new standard grades of these two types of tobaccos.

The intensity and quality of color of flue-cured and of cigar filler tobaccos were determined by means of color-measuring instruments. The results obtained were used in establishing the relationship of color to the groups and grade qualities within each type. The effect of temperature on the stability of tobacco color was studied. The results obtained indicate that color preservation in tobacco can be effected at freezing and below freezing temperatures.

The effect of fermentation on the shrinkage of the size of the leaf was studied in an effort to determine the yield of binders from fermented cigar leaf tobacco. Studies were also conducted on the effect of fermentation on the burn of cigar tobacco. Experiments were

conducted on devising methods for measuring the moisture absorption capacity of tobacco and of leaf thickness.

The analysis of the effect of overexpansion of facilities and the variations in the volume of tobacco handled by the individual warehouses, as these affect the efficient operation of flue-cured auction markets, has been substantially completed. A study of the extent to which fluctuations in the prices of flue-cured tobacco are associated with the organization and operation of the auction system of marketing flue-cured tobacco has been begun.

There has been continued cooperation in the study of cigar leaf marketing with the Storrs (Connecticut) Agricultural Experiment Station and with the Wisconsin Experiment Station and the Wisconsin Department of Agriculture.

Other Research

Investigations were conducted in the cultural practices of farmers and in the methods used by dealers and manufacturers in appraising the elements of quality, size specifications, and other factors contributing to the relative value of Pennsylvania Seedleaf Tobacco (type 41). These findings formed the basis for establishing tentative standard grades for this type.

Major revisions were made in the standard grades for Ohio cigar filler (types 42-44) after extensive study in methods employed by producers in growing, curing, and marketing the tobacco and in trade practices in these types. Further revisions were made in cigar binder types, Broadleaf (type 51) and Havana Seed (type 52), and in Puerto Rican cigar filler (type 46) on the basis of experience gained from the application of Tentative Standards in these types. Studies were made on the application of tentative grades for New York and Pennsylvania Havana Seed tobacco (type 53).

NAVAL STORES

A 5-percent increase in the combined output of gum and wood turpentine and a 6-percent increase in gum and wood rosin production was reported for the crop year 1950-51. This increase reflected a substantial expansion in wood naval stores output, which more than offset a 15-percent decline in gum production. Nevertheless, owing to international developments, demand far outran supplies during the crop year. Domestic consumption at 1,536,000 drums of rosin and 594,057 barrels of turpentine hit an all-time high while exports recovered to pre-World War II levels. Owing to this increased demand, both rosin and turpentine prices rose sharply during the first half of the fiscal year 1951. Thereafter prices were restrained by the General Ceiling Price Regulation of January 26, 1951. As a result, producers made little use of the price-support program, and most of the CCC rosin and turpentine stocks were liquidated. A naval stores market news service was started during the fiscal year.

Price-Support Operations

The 1950 crop of gum naval stores was supported at 60 percent of parity, or \$86.82 per production unit (50 gallons of turpentine and

1,400 pounds of rosin). The individual loan rates were 40 cents per gallon of turpentine and \$4.77 per 100 pounds of rosin grade X through G. Owing to the price rise accompanying the Korean crisis, no turpentine and only 270 drums of rosin with a loan value of \$6,658 were pledged under the program. All of the rosin was redeemed. This compares with the 1949 program when loan advances to producers covered 20 and 38 percent of the gum turpentine and gum rosin crops, respectively, and aggregated \$13,600,000.

The support level for the 1951 crop of gum naval stores was established at 90 percent of parity on crude gum, in order to encourage the production needed to meet unprecedentedly high demand levels. For the first time, parity was based on the price of crude pine gum rather than on the price of turpentine and rosin, the processed derivatives of the gum. The support level of \$128.21 for the gum naval stores production unit was apportioned in the ratio of 50 cents per gallon to turpentine and \$7.37 per 100 pounds to rosin. Although the program was inactive during the fiscal year 1951, producers have pledged both rosin and turpentine during July 1951 in order to minimize the downward trend of prices which occurred with the advent of cease-fire negotiations in Korea and the flush production season.

Owing largely to demands created by the defense program, about 2,100,000 gallons of turpentine (the sum total of CCC stocks except for 500,000 gallons being withheld for stockpiling) and 465,000 drums of rosin (about 63 percent of CCC stocks on July 1, 1950) were liquidated during the fiscal year 1951.

Market News

To provide all segments of the naval stores industry with improved current price information, a market news service on naval stores was started in Savannah during the fiscal year 1951. This service was made necessary by the change in the marketing process brought about when thirty-odd central processing plants virtually supplanted about 1,200 old style, individually farmer-operated fire stills.

The daily market news report covers prices for gum and steam-distilled wood rosin and turpentine on the basis of f. o. b. southern plants and f. a. s. southern ports in various types of containers. It carries current news of interest to all parts of the industry. Weekly and monthly summaries and averages also are issued. In addition, average prices paid producers for pine gum delivered at processing plants are reported weekly.

Activities Under the Naval Stores Act of 1923

Three lines of activity are carried on under the Naval Stores Act of 1923: (1) Inspection of naval stores upon request by interested parties; (2) establishment of standards for naval stores products; and (3) the regulation of naval stores in interstate commerce to prevent adulteration, mislabeling, or other malpractices.

Inspection

Inspection and certification of rosin totaled 571,000 drums in the fiscal year 1951 as compared with 810,000 the previous year. This reduced volume is explained principally by the smaller gum crop and

the increased quantity of rosin piped hot (and without opportunity for inspection) to adjacent consumer plants for conversion to synthetic resins, paper, size, and ester gum. The trend toward increased inspection of rosin in bags and tank cars (as opposed to drums) continued in fiscal year 1951.

Turpentine inspected and certified aggregated 8,981,000 gallons as compared with 8,335,000 a year ago. A new development was the inspection of 2,140,000 gallons of turpentine exported bulk in tank steamers.

Owing to the shift of crude gum processing operations from more than 1,000 country fire stills to about 30 central steam-distillation plants, PMA has established a procedure for continuous batch sampling and inspection by licensed inspectors at the central plants. The work of these licensed inspectors is closely supervised by PMA inspectors.

Standardization

The principal standardization problem dealt with during the year concerned the effect of sulfuric acid on the grade and suitability for a number of end uses of rosin produced from acid-stimulated pine gum at several old style pot stills which are not equipped with gum-washing facilities. Sulfuric acid is sprayed on trees to stimulate gum flow. Appropriate action is under way to determine the extent of contamination, if any, of the rosin, and the effect thereof on the various uses of rosin.

Other standardization work included research on developing tests for determining (a) volatile oil content of rosin, (b) acid number and saponification number of rosins, (c) unsaponifiable matter in rosin, and (d) dissolved water in liquid naval stores products. A survey was initiated, for the purpose of developing methods to determine the amount and quality of rosin and rosin acids in products known to contain rosin. Collaborative studies are being made to improve the color and stability against various types of solvents of new unofficial rosin type standards being made by a collaborating agency from a thermo-setting plastic material.

Regulatory Work

Under its regulatory program, PMA collected 165 samples of turpentine and rosin to check on adulteration, mislabeling, and other malpractices forbidden by law. Since the violations involved were not considered willful, no formal citation notices or prosecutions were instituted, but a total of 16 informal notices were issued.

(Subsequent sections of this report are concerned with PMA activities that involve all agricultural commodities.)

AGRICULTURAL CONSERVATION PROGRAM

Soil and water conservation practices were carried out on 2,577,135 farms under the 1950 agricultural conservation program. The cropland on these farms represented 64 percent of all the cropland in the United States.

Among the conservation practices carried out in 1950 were:

A total of 6,092,000 acres of pasture and range land was seeded to adapted grasses and legumes to protect the soil from erosion, con-

serve moisture, restore fertility to the land, and increase livestock production to meet defense needs.

About 23,304,000 tons of lime, 3,177,000 tons of phosphate—20 percent P_2O_5 equivalent, and 311,000 tons of 50 percent K_2O equivalent were applied to the soil to establish stands and improve the growth of grasses and legumes.

Almost 60,000 stock-water dams were constructed to provide for better distribution of livestock as a means of making better use of range feed and as a protection against erosion and depletion of essential parts of the Nation's grasslands.

As a protection to land during the winter and when not protected by regular crops, and as a means of restoring fertility and organic matter to the soil, a total of 18,795,000 acres was devoted to green manure or cover.

Runoff and erosion were checked by the construction of 75,138 miles of terraces. Also to protect against erosion and, at the same time, to provide a source of additional hay and pasture, about 46,000 acres of sod waterways were established.

To check sheet erosion, which skims topsoil from millions of acres, contour farming was carried out on 2,730,000 acres planted to intertilled crops and 2,418,000 acres devoted to close-sown crops.

As a protection against both wind and water erosion, 7,279,000 acres of cropland were farmed in field strips.

For more efficient use of irrigation water, 377,000 acres of land were leveled; 86,600 rods of ditches were lined; and 1,075,000 rods of irrigation ditches were constructed or enlarged.

One hundred eighteen thousand acres of trees were planted for forestry, windbreaks, and erosion control. This acreage also provided a home for wildlife.

These accomplishments were directly attributable to assistance made possible under the agricultural conservation program. The encouragement and stimulation provided by this assistance resulted in conservation greatly in excess of the amounts spent. In this way the appropriation of \$282,500,000 for the 1950 agricultural conservation program returned to the public, in the conservation practices carried out, double or treble the amount representing direct assistance.

In one community in Milam County, Tex., for example, local PMA committeemen obtained the services of vendors of cover crop seed and contractors with dirt-moving equipment. As a result the seeding of cover crops increased from 32,000 pounds of seed in 1948 to 156,000 pounds in 1950, and the construction of terraces rose from 27,000 linear feet in 1948 to 91,000 in 1950. The PMA committee in this county reports that the sharp increase in conservation as a direct result of assistance under the APC represented only half the conservation stimulated by the program within the county.

The limit of \$2,500 for assistance to any one farmer prevented the allocations in many counties from being used up by a few farmers who operate on a big scale. This limitation and the increase in small payments tended to favor the family farm over the large corporate-type farm. The manner in which local committeemen gave approval for assistance in accordance with needs, however, was of even greater significance in helping the family farmer in the protection and improvement of soil and water resources.

Conservation on individual farms was further stimulated by an experimental program known as the Farmer's and Rancher's Conservation Program which was carried out in 72 counties in 34 States under the 1950 program. Under this program, individual farmers were encouraged to develop their own operating program and to use available assistance such as is provided under ACP and the Soil Conservation Service to help them carry out these plans. The ACP itself, as well as operating procedures, was modified in keeping with the individual farmer's own program.

Through the use of the "purchase order" the ACP share of the cost of materials and services was "advanced" to a large number of farmers. This made it possible for farmers lacking funds to obtain materials and services necessary in carrying out essential conservation work. The "purchase order" was an assurance to vendors with dirt-moving equipment, and to dealers in lime, fertilizers, and grass and legume seeds, that the cost of the materials and services covered by the ACP assistance could be obtained immediately upon completion of the conservation structures or the delivery of the conservation materials.

The Agricultural Conservation Program also was effective in bringing to individual farmers in every agricultural county and community the improved methods, materials, and techniques developed by Department of Agriculture agricultural research scientists. This speeding up in the adoption of practices which have increased yields, reduced the cost of production, and improved the quality of agricultural commodities has been of more than passing significance. Actually it has been of tremendous importance in meeting defense requirements. The close working relationship between the scientists of the Agricultural Research Administration and PMA has fostered this movement. In turn, the experience in the field has led in several instances to additional research on problems encountered in the local administration of the agricultural conservation program.

As in previous years, administration of the program at the county and community levels was in the hands of locally elected farmer-committees. Although these committeemen serve only a few days a year in actual administration of the program for which they are paid, they are "on call" at all times and their influence in their communities and counties is an ever present stimulant to greater conservation and a constant source of program information. Nonpartisan elections are held every year in each agricultural community in the country. Every year the farmers in each of the 30,000 agricultural communities in the country elect a community committee of 3 members and 2 alternates and a delegate to the county convention where a county committee is elected.

On the shoulders of these farmer-committees rests the responsibility for local administration, not only of the agricultural conservation program, but also of price-support activities, the Federal crop insurance program, acreage allotments and marketing quotas, the sugar program, and many other special assignments.

REQUIREMENTS AND ALLOCATIONS

The Production and Marketing Administration determines domestic and foreign requirements for food and fiber commodities, estimates

supplies available from domestic and foreign sources, and establishes allocations as needed. PMA also takes the lead in developing the Department's recommendations for acreage and production goals.

Supply Estimates

In order that information on prospective supplies could be given continuing review, supply estimates committees were established late in 1950 on a commodity basis. PMA commodity branch directors or their representatives were made chairmen of these committees, the membership consisting of PMA commodity specialists and officials of the Bureau of Agricultural Economics, Office of Foreign Agricultural Relations, and the Extension Service.

The committees during the year compiled reports on available supplies whenever there was a significant change in the supply situation for a particular commodity and whenever a review was required in connection with proposed allocations or other controls. These committees also provided estimates of supplies for the period 1951-55.

Estimates prepared by the supply estimate committees have been used for comparison with estimated requirements, domestic and foreign, to determine whether or not surplus or deficit situations were in prospect. These determinations have formed the basis for allocation and other control actions as well as production goal programs. The committees also have recommended the production goals for the commodities for which they are responsible.

Requirements Development and Review

During the year PMA worked in close cooperation with the Office of Foreign Agricultural Relations of the Department of Agriculture, the Economic Cooperation Administration, and the Food and Agricultural Organization of the United Nations, in the development of world-trade tables which could be used as a guide in developing probable requirements and in evaluating requirements submitted by foreign countries. In the fall of 1950, when it became necessary to place cotton and cotton linters under export control, the initial allocations of these commodities were made on the basis of the new tables.

Several Government agencies known to have substantial requirements for food were requested early in the fall of 1950 to submit estimates of the quantities to be procured during the fiscal years 1951 and 1952. United States military requirements, requirements of United States civilians, and estimates from the Economic Cooperation Administration and those made by the Department on the requirements of non-ECA foreign countries, formed the basis for determining total requirements, which were used in establishing production goals for the 1951 crop year.

By January 1951 supply requirement tables indicated the need to establish an orderly flow of current requirements data from claimants. Meanwhile, the Secretary of Agriculture had designated the other Government agencies that were to act as claimant agencies before PMA for agricultural commodities. A reporting procedure was established whereby each of these agencies was requested to submit its requirements as of June 1 and January 1 of each year for the ensuing

2-year period. These requirements are reviewed quarterly and revised whenever the need becomes apparent. In addition, diplomatic representatives of non-ECA countries were asked to furnish estimates of their probable imports from the United States during the fiscal year 1952. These data are assembled and summarized to show total requirements for agricultural commodities, and are analyzed to determine the relationship between supplies and requirements. When an allocation or other control action becomes necessary, the requirements data which have been submitted by the claimant agencies become the basis for establishing allocations.

Interagency Food Committee

The Interagency Food Committee, an advisory committee on food requirements and allocations, is headed by the Administrator of PMA and staffed by other policy-making officials of PMA, the Department, and other agencies of the Federal Government. Supplementary allocation actions, such as set-asides, end-use restrictions, and inventory controls, are also considered by the committee.

Recommendations to the Chairman of the Interagency Food Committee are prepared by the following commodity allocations subcommittees: Cotton; Sugar and Molasses; Grain, Livestock, Meats, and Wool; Fats and Oils; Fruits and Vegetables; Dairy Products; Poultry and Eggs; Tobacco. These subcommittees are headed by the commodity branch directors of PMA and otherwise staffed by key program representatives from other agencies of the Department of Agriculture and various other Federal agencies.

Whenever the need for allocation of a particular commodity develops, the appropriate commodity allocation subcommittee brings together, in line with needs, all pertinent requirements and supply information for presentation, together with recommended allocations, to the Interagency Food Committee. After receiving the advice of committee members, the chairman of the committee is responsible for final approval of recommended actions.

Allocations and Export Controls

Despite the comparatively favorable situation with respect to agricultural commodities, trouble spots have arisen. The first involved sugar, which was placed under export allocation in August 1950. The price of sugar in the United States was cheaper than the price in other areas, and export demand became so great that the Department's efforts to provide adequate supplies at reasonable prices for domestic consumption would have been endangered if preventive measures had not been taken. At the present time only a negligible quantity of United States sugar is permitted to be exported.

The need for allocation next developed in cotton as a direct result of an abnormally small 1950 cotton crop—about 10 million bales as compared with almost 16 million bales the preceding year. As soon as this short supply situation became apparent in September 1950, cotton was placed under allocation to foreign countries and the volume of exports was restricted to the extent necessary to assure proper

division between domestic users and foreign countries. Because of uncertainties existing at that time, the initial allocation for export during 1950-51 was limited to 2,000,000 bales—substantially less than the export demand. As the extent of domestic requirements became more definite, additional quantities of cotton were allocated, the full allocation for the marketing year 1950-51 totaling almost 3,700,000 bales.

Cotton linters also were placed under export allocation late in 1950, but the initial allocation was zero. This had the effect of embargoing exports. Subsequently the embargo was eased slightly to permit minimum exports to meet highly essential needs in a few friendly countries.

A virtual embargo was placed on inedible molasses in September 1950, principally to assure retention in the United States of supplies needed for industrial alcohol production. This restriction was in effect at the end of the fiscal year.

In November 1950, distribution controls were placed on spinnable types of cotton wastes. Unlike cotton, the initial waste allocation was not made on the basis destination, but merely limited the total quantity to be exported. Currently, soft wastes are under a so-called "open-end" allocation which means that there are no quantitative limits on exports. However, each proposed export is carefully examined before approval.

Because of a world shortage, wool and mohair were placed under allocation in November 1950, and exports have been virtually prohibited since that time.

To insure that requirements of the Armed Forces would be met, an allocation of canned vegetables was established in March 1951. In this instance, the allocation was accompanied by a "set-aside" order under which packers are required to reserve specified percentages of their packs for procurement by the Armed Forces. Subsequently, parallel action was taken on most canned fruits. Through these programs, the Armed Forces will be assured of adequate supplies, and the burden of supplying them will be spread equitably among the packers.

Other allocations involve certain imported industrial oils. These included tung oil, castor oil, sperm oil, oiticica oil, coconut oil, sebacic acid, and palm oil. These were placed under export control during March for the purpose of permitting normal movement to friendly foreign countries, but preventing undue exports of domestic supplies. To implement the allocation of castor oil, domestic end-use restrictions were imposed.

Two commodity committees on agricultural products were established under the International Materials Conference: Wool, and Cotton and Cotton Linters. These committees have examined the possibilities of adopting measures to increase production, conserve supplies, increase availabilities, and obtain effective distribution and utilization. No international action was recommended to governments on these committees by midsummer. The large increase in cotton production in the United States from the 1951 crop indicated that supplies of cotton and cotton linters probably would be adequate to fill requirements, without the adoption of international control measures. Further consideration was being given to the question of wool supplies and requirements at the end of the fiscal year.

Production Programing

In early 1950, the stocks of most agricultural commodities, which had been depleted during and immediately following World War II, had been rebuilt. In some cases, the stocks had been increased to new high levels. There was a good deal of concern regarding the development of a general agricultural surplus situation, and as a result, acreage allotments and other production controls had been reinstituted on several commodities.

During the first half of 1950, however, there began to appear some evidence that the trend was being reversed. The Korean crisis in June 1950, made it apparent that production of some commodities had to be stepped up.

The 1950 production of cotton was substantially less than that of previous years as a result of reduced acreage and relatively low yields, and there was only about one-third of a good year's cotton crop in reserve to meet rapidly increasing domestic and export requirements. Other commodities for which increased production was most needed were corn, wheat, rice, vegetables for processing, and some field seeds.

An analysis of the supply situation for all major commodities and a review of the increased requirements resulting from the partial mobilization indicated the need for developing new estimates of the levels of desirable production and for devising methods to obtain that production. From these reviews it became clear that consumption of farm products generally was exceeding the 1950 rate of production and that consumption would continue at the 1951 rate or at a higher level for several years to come, unless there were unexpected events to slow down economic activity and the rising per capita incomes.

With this information for background, production goals were established for many 1951 crops. This program aimed at new record high production of about 3 percent above the previous record established in 1949. To aid producers in meeting these goals, the Department undertook to encourage more widespread use of pesticides, commercial fertilizer, and improved seeds, such as hybrid seed corn. The Department also took steps to insure the availability of these materials, and to provide assistance in obtaining the required farm machinery.

Despite the fact that the acreage allotment program resulted in some idle cropland in 1950, and that some increases would be possible in 1951 by returning the land to production, it was evident that additional production increases would be necessary in 1951 and subsequent years. It was also evident that any further substantial increase in production necessary to maintain a safe carry-over of major commodities and to meet the increased needs for those commodities, would have to come about chiefly through greater utilization of commercial fertilizers, hybrid seed varieties, and the adoption of other technological devices, including more efficient feeding of livestock. A complicating factor in this regard was the difficulty of increasing nitrogen fertilizer production capacity on short notice.

National production goals for 1951 were announced for crops or groups of crops as follows: Cotton, corn, oats, barley, grain sorghums, spring wheat, rice, dry edible beans, soybeans, flaxseed, sweetpotatoes, vegetables, and hay, pasture, and winter cover crop seeds. Some of these goals—the goal for oats, for example—called for an acreage

below that which would have been planted otherwise, in order to make more land available for higher yielding crops for which the need was urgent.

To inform farmers of the production program, a handbook and several commodity pamphlets were prepared for use by persons working on or interested in the goals program. In addition, numerous other reports were disseminated to the press, radio, and other informational media. The latter channels of information were utilized intensively when the March 1, 1951, report of farmers' intentions to plant indicated that for many key commodities the desired acreage would not be met.

Cotton and feed grains appeared to present the gravest problems. Even if the desired cotton goal of 16,000,000 bales is achieved or exceeded somewhat in 1951, stocks of cotton will not increase materially, as exports are expected to remain sufficiently high to keep the total stock position around 2,500,000 to 3,000,000 bales at the end of the season, as compared with a minimum level of carry-over of 2,000,000 bales in 1951. And although it appeared at the end of the fiscal year that the requested production of feed grains in 1951 may almost be reached, the heavy use of grain for livestock feeding will result in a reduction of stocks during 1951-52. The expected reduction is estimated at 4,000,000 tons, or about 14 percent of 1951 stocks, based on production forecasts at the end of the fiscal year.

Only a very limited amount of good acreage can be added to present cropland. Major increases in crop production, therefore, must result from more production on present cropland. An intensive program to increase yields will be required. This will necessitate shifting to the more productive crops to the extent consistent with sound conservation practices and the increased use of fertilizer, pesticides, and other good cultural practices. It also means increased adoption of conservation practices in the use of harvested crops, including efficient livestock feeding practices.

Because the need for continued high production will probably exist for several years, it is expected that production programing activities will be continued and will be intensified for the 1952 and subsequent crop years.

MATERIALS AND FACILITIES

During the fiscal year, PMA was delegated authority, under national defense legislation: (1) To develop requirements for materials and facilities, including equipment and supplies, needed to produce, process, package, and distribute food and fiber; (2) to act as claimant before allocating agencies of the Government for the requirements of agriculture and related industries; (3) to make recommendations for Government loans that might be necessary to expand food and fiber production in the interest of national defense; and (4) to make recommendations in connection with tax benefits designed to encourage investment of private capital in facilities needed for the defense effort. Although PMA also was authorized to handle the domestic allocation of farm equipment and commercial fertilizers, it was not necessary for the agency to exercise this authority during the fiscal year.

Materials and facilities required by farmers, food and fiber processors, and wholesale food distributors generally were adequate during the fiscal year. Exceptions were shortages of nitrogenous fertilizers, and superphosphates, some pesticides, barbed wire, burlap bags, twine, and, toward the end of the year, crawler-type tractors and their repair parts. Because of arrangements with the defense agencies and manufacturers for spot distribution to critical areas, or for the substitution of alternate products, these shortages did not become extensive enough to hinder production.

At the end of the year, however, it was apparent that the increasing direct defense demands for metals, chemicals, and other products which also are used in the production, processing, and distribution of food, posed the threat of shortages during the fiscal year 1952. This was particularly true in the case of sulfur and products requiring use of sulfur, such as phosphate fertilizers and pesticides, especially fungicides and grain fumigants. Nitrogen fertilizers are expected to be very short next year. Other supplies in which shortages had developed or were indicated were crawler-type tractors, and repair parts; tractor tires (unless inventories could be built up during the last half of 1951); and metal cans (tin cans), although indications were that the latter would be available up to limits established by the National Production Authority (NPA) in controlling their use.

In exercising the authority delegated to the Department of Agriculture under defense legislation, PMA has worked directly with the National Production Authority, the functional agency in charge of administering priorities and controls for materials needed in the defense production program, and the Defense Production Administration (DPA), established later to direct the over-all defense production effort. DPA is the policy-making and programing agency and NPA is the operational agency in connection with defense and civilian production.

During the latter part of 1950 and by January 1951, conservation and limitation orders of NPA had an increasing impact on the Nation's industrial economy and many agricultural supply industries, particularly smaller producers, experienced difficulties in obtaining materials. As the volume of these cases increased it became apparent that NPA's original policy of providing assistance in such problem cases by informal negotiations with suppliers of materials was not effective. On the basis of recommendations by PMA and other claimant agencies, NPA issued "DO" ratings (defense order priorities) to provide assistance in cases involving bottleneck items and to implement special production programs important to the achievement of food and fiber production goals and other defense objectives.

In handling these so-called spot assistance cases and those later aided through priorities or directives, PMA received considerable help from its State committees which not only found and passed on cases where assistance was necessary, but also investigated and reported on requests for aid received from their respective States. Examples of such special assistance, requested by PMA and provided by NPA, included steel for bulk fluid milk cans, steel drums for pesticides, special equipment for planting and harvesting castor-beans, mechanical cotton harvesting equipment, irrigation equipment, and materials

and equipment to meet requirements of the cotton expansion program in the Southwest.

During the period from February to June 1951, PMA received 143 requests for special assistance. Of this total, 124 were assigned ratings by NPA, 16 were assisted informally, and 3 requests were denied.

This type of assistance will continue to be necessary during the third quarter of 1951 for firms facing urgent materials supply problems, pending implementation of NPA's Controlled Materials Program. This program, effective July 1, 1951, is designed to assure adequate supplies of steel, copper, and aluminum for direct defense production and certain defense supporting industries, including agriculture.

Anticipating the need for an estimate of the major agricultural requirements essential to bring production up to defense levels, the Secretary of Agriculture, in October 1950, transmitted to the Secretary of Commerce a preliminary appraisal of requirements for the 1951 production program. On the basis of information available at that time, it was estimated that farmers would require 100 percent of the amount of farm machinery shipped by manufacturers in 1949 (latest year for which figures were available); 105 percent of the repair parts shipped in 1949; 100 percent of the amount of pesticides produced in 1950; and approximately the same number of man-days of farm labor as were required for the high production attained in 1949.

In December 1950, long-range agricultural requirements for farm machinery, construction, and maintenance, repair, and operating supplies, together with estimated acreage and production of various crops and livestock items for the years 1949 through 1954, were submitted to the National Security Resources Board. At the request of DPA, an estimate of the quantity of various shapes and forms of steel, copper, and aluminum required for major agricultural supply programs during each quarter of the calendar year 1951, was made early in 1951. These estimates were revised periodically as more complete information concerning requirements became available.

In April 1951, an estimate of requirements for specified materials other than steel, copper, and aluminum was submitted at the request of DPA. Included were such materials as magnesium, platinum, asbestos, mica, graphite, fabrics and yarns (including burlap), wood pulp, lumber, and a number of chemicals, such as sulfuric acid, chlorine, benzene, and nitrates.

To exercise properly its functions as a claimant and provide current information from areas of use on the availability of equipment and supplies needed in the production, processing, and distribution of food and fiber, PMA requested its State committees to submit monthly reports on the local supply situation with respect to pesticides, farm machinery and equipment, construction materials, general farm supplies, repair shop supplies, irrigation and water equipment, processing equipment and supplies, fertilizers, containers (including bags), bale ties, binder twine, fuels, electrical equipment, tires, and other items. These reports mostly expressed degree of adequacy of supply as "scarce," "short," or "critically short," and commented on conditions characterized as "local," "community," "county," or "State-wide." In a number of cases of critical shortages, PMA, through NPA or by direct contact with manufacturers, has been able to get supplies of such things as fertilizers, pesticides, and other agricultural supplies

routed to areas of need. In addition, the reports furnished information concerning the relation of the need in reporting areas to the total national requirements for farm supplies.

Farm Machinery and Equipment

Production of farm machinery and equipment during the 1951 manufacturing year is expected to exceed somewhat the 1949-50 volume. Demand for increased acreages of major crops, high farm income, and reduced labor supplies, resulted in higher retail sales of farm machinery and equipment during the year. At the same time, there was a trend toward the use of heavier machinery, further decline in demand for horse-drawn equipment, an increased demand for machinery for those crops to which production was shifting to meet defense food and fiber requirements, and an increased demand for equipment adequate to handle the larger supplies of fertilizer and pesticides used.

The principal problem faced by farm equipment producers during the year was the shortage of materials—steel, copper, aluminum, and component parts. During the first half of the fiscal year, direct-defense consumption of these metals represented only a small fraction of the available supply. But the defense program began to gain momentum early in the calendar year 1951 and required increasing amounts of steel, copper, and aluminum. At the same time, the farm equipment industry was using more of these materials than it was receiving, primarily because its orders were being scaled down by supplying mills, and because delivery periods were being lengthened. Some manufacturers, strike-bound late in 1950, were able to use materials received during the work stoppage to catch up on production in the early months of 1951. This contributed materially to the high production rate of the industry during the first quarter of 1951.

Deliveries of raw materials were restricted, however, as NPA began the issuance of orders designed to assure needed materials for defense requirements and to provide for equitable distribution of remaining supplies. In addition to these conservation orders, NPA issued a series of regulations designed to maintain steel output and reduce possible disruption in supplies of steel users. These latter regulations required steel users to place orders sufficiently ahead of shipments so that mills could schedule production. As the amount of steel set aside for filling defense-rated orders was increased, the effect on supplies available to the farm equipment industry became increasingly acute, particularly among smaller manufacturers.

NPA, on March 31, 1951, issued Order M-55, authorizing farm equipment manufacturers to use a defense-order rating to obtain materials for their June 1951 requirements. The program was first established for June, because mill orders for most types of steel had to be placed at least 45 days before delivery to permit scheduling of production. Order M-55 was followed by Order M-55A, which permitted manufactures to use the DO priority rating on orders for materials requirements for the third quarter (July through September) pending receipt of authorized controlled materials allotments issued under NPA's Controlled Materials Plan, which was put into effect on July 1.

The darkest spot in the machinery-supply picture at the close of the fiscal year was that with respect to crawler-type tractors and their repair parts. Historically, agriculture receives 20 to 30 percent of the crawler tractors produced in the United States. This percentage is considerably larger in the case of smaller tractors. Although domestic production of these tractors during the first 10 months of the fiscal year was running at a rate somewhat above 1949 and 1950 levels, a bad situation with respect to raw materials developed in May and June 1951, seriously hampering production of both tractors and repair parts. At the same time, increasing military demands for crawler tractors and repair parts made serious inroads into the supply normally available for agriculture, logging, construction, mining, other industrial uses, and export.

To avoid establishing an over-all distribution-control and rationing program for crawler tractors, PMA urged NPA to develop a program to maintain production at a level sufficient to meet essential demands and to restrict defense-order ratings for crawler tractors. NPA agreed to limit issuance of rating authorizations to military establishments, military construction projects, and other rated projects, such as those under jurisdiction of the Atomic Energy Commission.

Farm Transportation, Fuels, and Energy

Although production of tires for farm tractors and implements increased during the latter months of the fiscal year 1951, prior to that manufacturers' inventories had dropped substantially and in March 1951 were at the lowest point since 1945. At the request of PMA, NPA Rubber Order M-2 was changed to obtain the same proportionate production of farm tires and tubes during the first half of the calendar year 1951 as each manufacturer produced during the same period of 1950. Estimated requirements for replacement tractor and implement tires during the calendar year 1951 have ranged as high as 1,500,000 and for 1952 are expected to range up to 2,500,000, as compared with about 1,390,000 tires used in 1950. This indicates possible shortages during the next calendar year unless manufacturers' inventories are replaced during the final half of 1951.

Although PMA State offices were still reporting some shortages of farm truck tires towards the end of the fiscal year, these shortages were not as widespread as in earlier months. Progressive improvement in this situation is expected, since truck- and bus-tire production at the end of the fiscal year was one-third higher than the 1951 average, and manufacturers' inventories were on the upturn.

Supplies of farm trucks and trailers appeared adequate during the year. Several requests were received for assistance in obtaining steel for sanitary milk-truck bodies, but the situation at the end of the fiscal year showed improvement over previous months.

Fuels generally were in good supply, with the exception of charcoal and coke, for which a tight supply situation is expected to continue for the next year or so. A number of requests for assistance in purchasing fuel tanks were received, and some requests for boilers for heating purposes, indicating that these items were difficult to acquire without ratings. A special allotment of 1,814 tons of steel was directed by

NPA, at the request of PMA, for fabrication of fuel oil tanks needed for curing tobacco.

Fertilizers

Fertilizer supplies were greater in the fiscal year 1951 than ever before. Despite this, it is felt that farmers would have used considerably more fertilizer had it been available. Nitrogen supplies were up 25 percent, as compared with the previous year, potash supplies were up 28 percent, and phosphate supplies were up about 8 percent. The over-all supply of fertilizers was about 20,000,000 tons—with a total value of \$800,000,000. The use of this fertilizer added an estimated \$3,000,000,000 to the value of crops produced.

It was estimated at the end of the year that the current annual deficit in nitrogen fertilizer amounted to 500,000 tons, nitrogen basis. It was further estimated that there should be 100,000 additional tons of fertilizer nitrogen made available annually to meet the food demands of an increasing population. A program calling for these increases in nitrogen production, including estimates of requirements of materials and equipment which would be needed, was worked out and presented to NPA and DPA. A part of the program was approved by the defense agencies.

Several new nitrogen-producing facilities were approved under the programs providing for accelerated amortization for tax purposes to facilitate expansion of production deemed necessary to the national defense program. It was not expected, however, that any substantial part of these new nitrogen-producing facilities would be in production before 1952.

In addition to seeking this nitrogen expansion, PMA did considerable work with the Department of the Army looking toward reactivation of the Army's ammonia plant at Morgantown, W. Va. It appeared highly probable at the close of the fiscal year that this plant would open in 1952. It has a capacity of 180,000 to 200,000 tons of nitrogen a year. A substantial part of this production is expected to be available for nitrogen fertilizer.

A major fertilizer problem during the year was the acute shortage of sulfur and sulfuric acid which affected the production of superphosphates. PMA collaborated with the Federal, State, and local agriculturists in plans for educational programs to promote adoption of procedures to obtain more efficient use of phosphates in food production, and took part in launching a sulfur and phosphate conservation program designed to stretch available supplies during the coming year.

Prospects for 1952 are for a small increase in nitrogen and potash production, but phosphate supplies are expected to be smaller owing to an acute shortage of sulfur and sulfuric acid.

Pesticides

A pesticide survey was conducted through State PMA Committees to provide—in addition to estimates of total requirements for 1951—a check on production reports from industry sources, indications of trends or shifts from one pesticide to another, and a percentage-wise basis for computing area and crop requirements for 1951. The survey

indicated that requirements for major pesticides in 1951 would be considerably higher than in 1950.

Quantities of certain pesticides, consumed in relatively large amounts in 1950, and estimated 1951 requirements are shown in table 7.

TABLE 7.—*Domestic agricultural consumption of major pesticides in 1950 crop year and estimated requirements for 1951*

Pesticide	Unit	Used in 1950 ¹	Required in 1951
Benzene hexachloride.....	Pound.....	71, 500, 000	84, 000, 000
Calcium arsenate.....	do.....	39, 000, 000	52, 000, 000
Copper sulfate.....	do.....	108, 480, 000	169, 600, 000
DDT.....	do.....	66, 000, 000	85, 000, 000
2,4-D.....	do.....	17, 600, 000	22, 000, 000
Grain fumigants.....	Gallon.....	² 2, 653, 180	2, 845, 547
Lead arsenate.....	Pound.....	28, 600, 000	37, 000, 000
Sulfur dust.....	do.....	² 392, 602, 000	483, 329, 000

¹ Calculated from over-all industry figures, except as noted.

² From PMA's pesticide survey.

PMA supported numerous applications to NPA for raw materials and other supplies necessary to obtain production of pesticides and weed killers. It is believed that this assistance, both formal and informal, resulted in the production of a considerable quantity of materials which otherwise would not have been available for agricultural use in 1951.

In addition to the acute sulfur shortage, there was a scarcity of the two principal raw materials—chlorine and benzene—required for the manufacture of such major pesticides as DDT, benzene hexachloride, toxaphene, and 2,4-D weed killer. Efforts were concentrated on obtaining sufficient supplies of these raw materials to assure continued operation of production facilities. Production of pesticides requiring chlorine and benzene showed a marked improvement at the close of the fiscal year.

Military and other direct defense requirements for benzene and chlorine are increasing, however, at the same time that agricultural demands are mounting, and supplies of synthetic chlorinated pesticides may be short in some areas. Distribution difficulties may cause a few tight local situations.

PMA, in cooperation with NPA, was able to alleviate immediate critical shortages of grain fumigants during the period of heavy demand in the fourth quarter of 1950, but over-all shortages of basic chemicals, particularly carbon tetrachloride, remained a serious problem at the close of the fiscal year. NPA and manufacturers were aware of the situation and were continuing to provide special shipments to augment normal quantities of fumigant chemicals. The drive for conservation of sulfur was joined on the pesticide front, and farmers were urged to use the chemical only when required by the existence or immediate threat of an actual serious infestation which could not be controlled by other means. At the request of PMA, an additional

allotment of 15,000 tons above sulfur grinders' regular season's supply was made by NPA, with the understanding that the allotment was to be sold for pesticidal purposes only. This relieved the critical shortage of dusting sulfur for current crops. Despite the shortage of metallic copper, production of copper fungicides was maintained at an adequate level.

Farm Construction

PMA State Committees reviewed and made recommendations on requests for supplies of well casing, which is in critically short supply. PMA then arranged for NPA to assign "DO" ratings (defense order priorities) to obtain steel for standard, small-diameter, well casing when certified as essential by the appropriate PMA State Committees. Additional allotments of steel also were authorized by NPA for large-diameter well casing used in the deep, large-volume water wells in the Southwest. These projects also were certified by the State committees. The certification activity was to end when the materials were placed under NPA's Controlled Materials Program (CMP) on July 1, 1951.

Upon recommendation by PMA, NPA took action under its aluminum control order to ease restrictions on production of portable irrigation equipment and aluminum roofing. Priority ratings and directives were obtained from NPA for steel and copper for production of oil burners for curing flue-cured tobacco and tobacco-barn flues which should be adequate for the 1951 crop.

In anticipation of the higher production of cotton called for in 1951, PMA enlisted the cooperation of NPA and the steel industry to assure an adequate supply of bale ties. The two largest producers of ties were operating at near capacity during the last half of the fiscal year and directives have been issued by NPA which will keep all producers operating at close to capacity through calendar year 1951.

Production of hay and straw bale ties and coiled wire for automatic balers should reach a record of 192,000 tons by the end of the third quarter of the calendar year 1951. At the close of the fiscal year, June 30, 1951, 134,000 tons had been made available, counting a carry-over of 28,000 tons from the fourth quarter of 1950.

Processing Facilities and Equipment

A total of 74 processing-facilities programs were developed within PMA and in collaboration with other agencies of USDA during the fiscal year. The quantities of controlled materials—steel, copper, and aluminum—necessary for the programs, by quarters, were estimated and requests for 1951 were made to allocating agencies. PMA was successful in getting NPA to extend priority or directive assistance to obtain steel for the following special programs:

- 25 cottonseed sterilizers for oil mills needed in connection with the Federal pink bollworm quarantine.
- 25,000 tons of steel, plus components, for the manufacture of cotton ginning and delinting machinery.
- Priority assistance for the manufacture of sufficient cotton bale identification tags and wire attachments to take care of the anticipated 16 million bales of cotton and cotton linters for 1951.

In addition to these cases, priorities were obtained on a "spot assistance" basis for about 200 food-processing concerns that needed help in getting various types of materials, equipment, and machinery for plant construction or maintenance.

Although the supply of materials for food-processing facilities and equipment during the fiscal year 1951 was reasonably adequate, the outlook—particularly with regard to stainless steel—is not so favorable for 1952. It is expected that some stainless steel will be allocated to food-processing equipment under CMP, but the amount will be small, as its use is restricted by NPA order to functional parts of machines.

Containers

At the end of the fiscal year it appeared that supplies of metal cans (tin and blackplate) would be adequate to take care of the products to which their use had been limited by NPA. Under a use limitation order which first became effective in April 1951, NPA divided products for which cans could be used into two groups: A, which included most perishable and seasonable foods and certain critical nonfood products; and B, other foodstuffs and nonfood products. Generally, use of cans for A products ranged from unlimited use down to 100 percent of the base period used in the order. B products were permitted can quotas ranging, in very few instances over 100 percent, down to 70 percent of the base period. The outstanding problem in the latter part of the fiscal year was inability of can manufacturers to obtain sufficient material for products in the B group at the limits of use permitted in the order, since they had to supply all A-group requirements first. A revision of the order was to become effective July 1, 1951.

Because of increasing military demands for aluminum, it was necessary for PMA to request NPA action to provide sufficient aluminum foil for food-pack uses, where substitutes for that product were not feasible, and for sanitary milk bottle closures. In addition, relief was sought for producers of aluminum milk bottle crates and meat lugs.

Because of the over-all steel shortage, serious difficulty developed, and apparently will grow, in the container field as a result of inability of manufacturers to obtain nails, rivets, staples, rods, and steel wire for wire-bound boxes.

Transparent wrappings were seriously short in supply at the end of the fiscal year, and although cellophane, pliofilm, and polyethylene were available to meet most urgent food-packing requirements, supplies were expected to grow increasingly tight as military requirements increased.

Although the over-all bagging situation had eased somewhat at the end of the fiscal year, supplies were inadequate to compensate for the serious shortage of burlap earlier. This was brought about by high market prices in India as compared with domestic price ceilings. Cotton bagging, fairly scarce during the first quarter of the calendar year 1951, was more plentiful thereafter, and at the end of the fiscal year supplies were reported adequate to meet all demands. With equally favorable crop prospects for both cotton in this country and jute in India and Pakistan, prospects appeared good for textile bags in 1952.

Binder and baler twine shortages were reported from various parts of the country during the last half of the fiscal year, despite the fact

that shipments of the twines by manufacturers were reported as almost double those of last year. Inasmuch as agricultural requirements for twines have not increased nearly as much as demand has risen, the situation is attributed to bad distribution in some areas and possible anticipatory buying.

Barter, Stockpile, and Export Controls

Under Public Law 85, Eighty-first Congress, PMA exchanged cotton, corn, wheat, and grain sorghums, valued at \$8,207,000, for strategic and critical materials for the national stockpile. PMA also represented agriculture on the Munitions Board Interdepartmental Stockpile Committee, and provided representation for the Department of Agriculture on the Department of Commerce Advisory Committee on Export Policy and other working groups assigned special tasks in connection with the administration of export controls.

Defense Loans and Accelerated Amortization for Tax Purposes

Section 302 of the Defense Production Act of 1950 authorizes direct Government loans to private business enterprises, if such action is determined to be essential to the national defense, for "Expansion of capacity, development of technological processes, or the production of essential materials or services." Such loans may be made only to the extent that they are not otherwise available on reasonable terms. Through Executive order, the Secretary of Agriculture was authorized to certify such loans with respect to food, and DPA delegated to the Department of Agriculture authority to make recommendations to that agency with respect to loans for fertilizer and farm equipment facilities.

Investigation of the technical and administrative aspects of these loan applications was made by the appropriate branch and staff specialists in PMA, with the assistance of PMA State committees in the areas involved if it was deemed necessary. The credit investigation of applications otherwise approved was made concurrently, upon request, by the Reconstruction Finance Corporation. Where loan applications falling in the area of direct responsibility of the Department of Agriculture were approved, they were certified to RFC, the agency directed by Executive order to make the loans. Recommendations on other applications were made to DPA.

PMA considered, during the fiscal year, 38 applications for section 302 loans, covering a total of \$40,686,000. Of this number, two loans, totaling \$535,000, were certified for approval. Most of the other applications were denied.

The Eighty-first Congress also amended section 124A of the Internal Revenue Code to permit the depreciation, for tax purposes, of a designated percentage of the cost of new facilities over a period of 5 years. Applications for this accelerated amortization for tax purposes were made to DPA, which referred those pertaining to food and fiber to PMA. In addition, applications covering public-storage facilities for agricultural products, for farm machinery, and for fertilizer production and distribution facilities were referred to PMA by the delegate agencies primarily responsible for recommendations.

In reviewing the 500 applications referred to it during the fiscal year, PMA had to determine whether or not a shortage of the facilities or services existed, or whether a shortage was in prospect locally, regionally, or nationally. If an application met these requirements, it was then necessary to determine the proportion of the cost of the proposed facility which could be recommended for tax benefits. An important part of this decision was the determination of the economic usefulness of the facility after the emergency (5-year) period. Applications reaching PMA for recommendation were referred to the PMA branch having primary responsibility for that segment of the agricultural economy which would be served by the proposed facility. In addition to the recommendations of PMA branch specialists, field investigations were made where necessary. On the basis of PMA's recommendations, the applications were either denied or certificates were issued by DPA, indicating the percentage to be authorized for tax purposes.

During the fiscal year PMA received from DPA 358 applications covering proposed facilities, with a total valuation of \$165,551,000. Of these, 112 applications for projects totaling \$32,132,000 were approved; 120 applications for projects totaling \$91,106,000 were denied; 4 cases totaling \$843,000 were withdrawn; and, at the end of the fiscal year, 122 applications totaling \$41,469,000 were pending. In addition, PMA received from DTA 142 applications covering storage facilities totaling \$40,747,000. Of these, PMA recommended to DTA approval of 44 applications involving facilities totaling \$11,445,000 and recommended denial of 53 applications totaling \$18,374,000. At the end of the fiscal year 45 of these applications for a total of \$10,928,000 were pending.

MINIMUM LEGAL PRICES

The Defense Production Act of 1950 gives to the Secretary of Agriculture responsibility for determining the legal minimum prices below which ceiling prices on agricultural commodities cannot be established. (Responsibility for determining the actual price ceilings within the framework of these legal minimums and other pertinent provisions of the act was placed in the Office of Price Stabilization.) In September 1950, the Secretary of Agriculture delegated to the Production and Marketing Administration primary responsibility for the development of these legal minimums. In carrying on this work, PMA has the cooperation of other Department units, such as the Bureau of Agricultural Economics and the Office of the Solicitor.

Determination of the Minimums

These legal minimum prices are established by the Department in accordance with terms specified in the act. Under the act, the legal minimum is generally the higher of (1) the most recent parity price, or (2) the highest price received by producers during the month preceding the invasion of South Korea (May 24-June 24, 1950). For commodities for which the market was not active during this latter month, a recent representative period prior to May 24-June 24 adjusted to a level in line with prices received by producers generally

in the pre-Korean month is used. There also are special provisions relating to certain tobaccos and to fluid milk.

On January 26, 1951, the Department determined and announced United States average legal minimum prices for 165 agricultural commodities, all the commodities for which the Department calculates a parity price. Since that date, revisions have been made on a monthly basis and published in "Agricultural Prices," a report issued by the Bureau of Agricultural Economics.

As required by the act, these average legal minimum prices are being adjusted for grade, season, and location, where appropriate. These adjustments provide the Office of Price Stabilization with bench marks for use in establishing price ceilings for different qualities of the commodity for different locations or for different seasons. Determination of these United States average legal minimum prices and adjustments by the Department does not mean that OPS likewise must establish price ceilings at the legal minimum levels. OPS may establish prices at levels higher than the legal minimums, but it may not set prices below the minimums.

For most agricultural commodities, the legal minimum prices have been equal to the current parity price. The major exceptions in June 1951 were mohair, soybeans, beef cattle, lambs, sheep, and calves.

At the end of the fiscal year, average prices received by farmers for most agricultural commodities still were below legal minimums. Relationship of average prices received by farmers for major commodities related to the legal minimum on June 15, 1951, was as follows:

Commodity:	Percentage of legal minimum (percent)	Commodity:	Percentage of legal minimum (percent)
Wool.....	178	Eggs.....	94
Cottonseed.....	129	Corn.....	92
Beef cattle.....	124	Rye.....	90
Cotton.....	124	Chickens.....	87
Lambs.....	120	Wheat.....	86
Veal calves.....	118	Oats.....	85
Crude pine gum.....	118	Dry edible beans.....	83
Butterfat (in cream).....	99	Barley.....	80
Rice.....	99	Flaxseed.....	72
Hogs.....	99	Apples.....	65
Milk, wholesale.....	98	Potatoes.....	59
Soybeans.....	97	Oranges.....	41

FOOD DISTRIBUTION PROGRAMS

Food distribution programs of the Production and Marketing Administration reflected the changes that took place in the general outlook for food. At the beginning of the year, major emphasis was placed upon expansion of outlets for commodities acquired under price-support and surplus-removal operations. As the year closed, however, distribution operations were geared to a generally favorable food supply situation—but one containing possibilities of both temporary shortages or surpluses of certain commodities.

Civilian Food Requirements

PMA was authorized under the Defense Production Act of 1950 to develop civilian requirements for all major food items and to repre-

sent civilians in all food-allocation procedures. In carrying out this responsibility, PMA prepared 2 series of civilian food requirements, covering the quantities of approximately 140 food items needed for civilian distribution in the current and in the succeeding year, respectively. In addition, preliminary long-range estimates were prepared, covering civilian food requirements for the next 5 years. In developing such requirements, consideration was given to previous consumption patterns; anticipated demand; special needs of vulnerable groups, such as children and workers in heavy industries; and quantities required to maintain essential working inventories in distribution channels.

In addition to its continuous analysis of supplies and requirements, PMA also maintained a two-way channel of communication with the food trade industry concerning potential food distribution problems. Key distributors in major marketing areas, who cooperate in merchandising programs for plentiful foods, provided information on reported or potential local food shortages and on other distribution trends.

During World War II, food shortage problems were most acute in areas where heavy influxes of population for defense purposes put severe pressures on local food distribution facilities. Anticipating new problems of this type, PMA has arranged, with the Critical Areas Committee of the Defense Production Administration, to receive regular information concerning areas of rapidly increasing population. Field personnel check with food distributors in designated areas to determine if facilities are adequate or if assistance is needed in obtaining necessary expansions. Similarly, continuous study is made of such matters as industrial feeding, the special needs of vulnerable groups (hospital patients, preschool-age children, diabetics, and others), so as to prepare for special feeding programs, should they become necessary.

PMA also has worked with the Federal Civil Defense Administration in developing plans to maintain adequate food supplies for civilians under emergency conditions.

National School Lunch Program

Participation in the national school lunch program established a new record in 1951, its fifth year of operation under permanent legislation. A total of 8,600,000 children participated, an increase of 10.2 percent over peak participation in the previous year.

Congress appropriated \$83,500,000 for operations in 1951, under the National School Lunch Act, the same amount as in 1950. Of this amount, \$68,275,000 was apportioned among the States and Territories in the form of cash payments, to be used by schools to purchase food from local suppliers. A total of \$13,700,000 was used by PMA for the direct purchase of commodities under section 6 of the act. The remaining amount, \$1,525,000, was allotted for operating expenses—this being well under the 3.5 percent authorized in the act. As in other recent years, no part of the appropriation was made available for nonfood (equipment) assistance.

Financial contributions to the program from sources within the States continued to increase and the preliminary estimate totaled

\$286,000,000 for 1951. Federal cash assistance funds, which are required to be matched 1.5 to 1 from sources within the State, actually were matched better than 4.5 to 1 in 1951.

A total of 1,400,000,000 meals was served in 1951, 67 percent being type A (complete) lunches—a larger percentage than in 1950. Out of every eight meals, one was served free—or at a reduced cost—to children unable to pay the full price of the lunch.

Participating schools increased the amount spent for local food purchases in 1951, buying foods valued at \$214,000,000, as compared with \$181,000,000 in 1950. (These expenditures do not include the value of commodities donated by USDA.)

The national school lunch program continued to be an important outlet for commodities acquired by the Department under surplus-removal and price-support programs. Approximately 327,000,000 pounds of these commodities were used by schools, in addition to the 65,000,000 pounds of commodities purchased specifically for school lunch use under section 6 of the National School Lunch Act.

Program expenditures for food (including the value of donated commodities), labor, and equipment amounted to approximately \$391,000,000, as compared with \$350,000,000 in 1950.

Improvement in program administration continued. Seventeen State agencies now have assumed all or part of the responsibility for fiscal audits of individual school programs—a function previously performed by PMA. States also expanded their workshop programs, designed to improve food-management practices of local school lunch workers. In its program of technical assistance, PMA has placed special emphasis on assisting schools to utilize donated commodities more efficiently, including information on good storage practices, inventory control, and low-cost menus featuring donated commodities.

During 1951, PMA administered the school lunch program in 1,993 private schools that served lunches to 311,480 children in 28 States and 1 Territory, where State agencies are prohibited by law from disbursing Federal funds to private schools. On May 1, 1951, responsibility for the administration of the private school program in Massachusetts was transferred from PMA to the State, when the Commonwealth attorney general ruled that such a transfer could be made.

Direct Distribution

The volume of commodities distributed to domestic recipients in 1951 totaled 630,000,000 pounds, which was higher than in other recent years except 1950. At the end of the year, however, fewer commodities were available for donation, principally because Government-owned inventories of certain foods had been resold to the trade and 1951-crop Irish potatoes were not eligible for price support.

During the year, there were distributed to school lunch programs, charitable institutions, and welfare agencies approximately 195,745,000 pounds of commodities purchased under authority of section 32 of Public Law 320, Seventy-fourth Congress. Major commodities making up this total were: Fresh apples, fresh beets, fresh cabbage, canned sour cherries, cranberry sauce, extracted honey, sweetpotatoes, dry beans, and frozen turkeys. These commodities were distributed to approximately 10,942,000 individuals this fiscal year, compared with

11,200,000 last year. Of this total, 9,901,000 were school children. Schools are eligible to receive these commodities whether or not they participate in the national school lunch program, and many schools with no facilities for preparing foods are able to use items such as fresh fruits to supplement home-packed lunches.

During the year, a total of \$13,700,000 was used to purchase 65,416,000 pounds of selected foods for use in the national school lunch program, under provisions of section 6 of the National School Lunch Act. Making up this total were: Dry beans, process cheese, grapefruit sections, concentrated orange juice, peanut butter, pork-shoulder picnics, and canned tomatoes.

Under section 416 of the Agricultural Act of 1949, five price-support commodities—Irish potatoes, nonfat dry milk solids, dried eggs, Cheddar cheese, and creamery butter—were made available from CCC inventories to school lunch programs, the Bureau of Indian Affairs, and to public and private welfare agencies for the assistance of needy persons in the United States. These commodities also were made available to private welfare organizations in the United States for the assistance of needy persons overseas.

Domestic distribution of "section 416" commodities to 9,191,264 recipients totaled 369,081,700 pounds. The recipients were divided as follows: School children, 7,299,640; inmates of charitable institutions, 1,309,077; welfare recipients, 553,090; and needy Indians, 29,457. Also, about 201,000,000 pounds of section 416 foods were made available to United States private welfare agencies for distribution to needy groups overseas.

Large sales of Cheddar cheese, creamery butter, and nonfat dry milk solids exhausted or reduced Commodity Credit Corporation inventories to such an extent that there was no further danger of loss through deterioration and spoilage during their normal storage period. Consequently, butter and cheese were removed from the availability list in December 1950; and nonfat dry milk solids in June of 1951. Of the five designated section 416 foods, only dried eggs were available at the end of the year, and their distribution was restricted to domestic outlets.

PMA developed and issued, in handbook form, a simplified procedure for handling commodities, to assist State agencies in carrying out their operations. As a part of its program of assisting State agencies, PMA continued to stress the need for proper storage and handling of commodities in warehouses, at receiving points, and in the schools and institutions receiving donated foods. In this connection, a series of posters emphasizing good refrigerated storage was developed as a companion piece to the one on dry storage prepared in 1950. This material will be used in school lunch workshops to call to the attention of local managers the importance of proper commodity handling and use.

Food Preservation

PMA continued to assist State agencies in their efforts to develop school, institutional, and community food-preservation facilities during 1951. These facilities have helped to expand outlets for fresh fruits and vegetables available under surplus removal (sec. 32) pro-

grams. Of the fresh apples purchased in 1951, outlets for an additional 16,000,000 pounds were available because States were in a position to process apples for later use. Outlets for beets, distributed in the Southeast and Northeast, were increased by 65 percent through donations for processing, and more than 310,000 pounds of sweet-potatoes were canned or frozen for later use.

These preservation activities on the part of schools and tax-supported institutions also help to expand regular markets for perishables. In 1951, for example, the purchase, at the peak of the supply season, of 7 carloads of Michigan peaches by a neighboring State, for institutional canning, contributed to the stabilization of a market in temporary distress.

The installation of new types of equipment in both community and institutional plants brought requests from States for assistance in demonstrating up-to-date processing techniques. A total of 62 such workshops were held, at which supervisors of 1,161 plants participated. Furthermore, 43 drawings, including floor plans and equipment designs, were developed and were used by 168 plants.

To encourage the processing of commodities in schools and institutions that do not have access to central processing facilities, Agriculture Handbook No. 11, Canning in Glass Jars in School and Institutional Kitchens, was prepared. This publication shows how such kitchen facilities can be adapted for waterbath canning of acid foods. Reports indicate that it proved effective in increasing the quantity of Government-donated apples processed. In the Southeast, for example, 1,277 schools and 81 institutions canned apples in their kitchens.

Plentiful Foods Program

In cooperation with food trade groups, PMA continued activities designed to increase the movement of plentiful foods through normal trade channels. Under this program, food trades groups are encouraged to feature foods in plentiful supply in their advertising and merchandising programs.

Through the issuance of a monthly list, PMA regularly informs the trade concerning foods expected to be in plentiful supply and in need of merchandising assistance. During 1951, an average of 13 foods appeared on each monthly list, as compared with an average of 20 in 1950.

Twenty-two special food drives were undertaken during 1951. During these drives, the trade concentrated its merchandising attention on a single item so as to maximize sales during the period of peak supply. Approximately two-thirds of these drives were for areas or States rather than on a national basis. Special drives were undertaken for such varied items as sweetpotatoes, cheese, and turkeys. Typical results are those obtained on the sweetpotato drive when an important producer group reported "an unprecedented movement to the Nation's markets." Some of the retail outlets cooperating in the drive reported sales of more than double those of the preceding year. During a special program on Michigan peaches, a midwestern restaurant chain sold in 1 day the supply usually purchased for a full week.

As one means of combating inflation, an expanded food-merchandising program was undertaken at the request of the Director of the Office of Price Stabilization. At the end of the year, an intensified program was under way in six major trading areas. Each week food wholesalers, retailers, public feeders, and allied industries in the six cities are provided with information concerning those foods expected to be in especially good supply in their local market. The release of the list is timed so as to be used in week-end food advertising and trade promotions.

TRANSPORTATION AND WAREHOUSING

A sharp increase in bulk grain exports during the early months of 1951 required regulation of the movement of grain to port under a system made effective cooperatively by PMA and the Defense Transport Administration. The capacity of Government-owned storage was increased to a new all-time high. Other storage expansion activities were continued, with the exception of the so-called storage guarantee program, which was terminated in February 1951. Programs with respect to inspection and maintenance of stored Government-owned commodities, and the approval and supervision of warehouses under the United States Warehouse Act were carried out on a continuing basis. The interests of agriculture were presented in a number of cases before Federal and State regulatory agencies with respect to rail, motor, water, and air transportation rates and services.

Grain Port Handling Permits

In January 1951, it became apparent that the volume of grain scheduled for February lifting would overtax the capacity of port grain-handling facilities. Port elevators could not handle the volume anticipated, and the problem was further complicated by a shortage of boxcars and ocean-going vessels. Under the circumstances, a system for regulating the movement of grain for export obviously was necessary.

After discussions between officials of the Defense Transport Administration and the Department of Agriculture, General Order DTA-2 was issued by the Defense Transport Administration on March 1, 1951. This order provides that the Department of Agriculture make recommendations to the Defense Transport Administration on the issuance of grain port handling permits to cover all export movements of grain and for the handling by port terminal warehouses of grain intended for domestic sale or use. Recommendations by the Department are based on needs of the countries of destination, availability of grain for the proposed movement, and availability of transportation facilities and port terminal warehouse space. The order was amended on April 12 to further require a permit for all import, coastwise, and intercoastal movements of grain.

From the time of inception of General Order DTA-2 through June 29, 1951, the Department of Agriculture recommended to DTA the issuance of 1,224 port handling permits, totaling 6,208,100 long tons. Of this total, 3,178,800 long tons represent grain to be handled by PMA and 3,029,300 long tons by commercial shippers.

Storage Expansion

The Commodity Credit Corporation purchased, during the fiscal year, grain-storage structures having a capacity of approximately 93,000,000 bushels. These purchases increased the capacity of CCC-owned grain-storage structures to approximately 545,000,000 bushels. Completion of approximately 93,000,000 bushels of grain-storage space had been assured at the end of the year under the CCC's storage guarantee program. This program, announced in August 1949 to encourage construction of commercial warehouse facilities through guarantee of usage, was discontinued as of February 28, 1951. Applications filed on or before that date, however, were eligible for approval before June 30, 1951. The program in effect during the current fiscal year guaranteed the use of 75 percent of 90 percent of the storage capacity for 3 years for completely new facilities and for 2 years for new additions to existing facilities.

Loans were made during the year for the construction of on-farm storage structures having a capacity of 38,000,000 bushels. The total capacity of storage structures constructed under such loans since the inception of the program in June 1949 was 85,000,000 bushels.

Maritime Administration ships anchored in the Hudson River at Jones Point, N. Y., provided an additional 12,000,000 bushels of storage space. However, in line with the policy to restrict the use of leased space where possible, arrangements were made by the end of the year to discharge all grain stored in the ships. At the same time, storage space acquired through leases or "right-of-entry" agreements in buildings of the Army, Navy, Air Force, and other Government agencies was reduced from 12,000,000 to approximately 2,000,000 bushels.

Storage Statistics

In April 1951, PMA initiated procedures for the compilation of a complete listing of storage elevators and warehouses having a rated capacity of 2,000 or more bushels available for the storage of grain in the United States. Though several listings were available to the Department of Agriculture and the various trade groups, none were complete, nor were they in agreement as to number of facilities, capacities, and other data. Accordingly, a listing showing the name of each facility, its location, and capacity, and the railroad serving it was made and transmitted to PMA State Offices and PMA Commodity Offices for verification at the county level in collaboration with the Bureau of Agricultural Economics and grain trade groups. As of the close of the year, verification by the county PMA offices was practically complete and compilation of the final listing had been started.

Storage Agreements

Uniform storage agreements, under which Government-owned stocks and stocks pledged as security for price-support loans are stored in commercial warehouses, were in effect at the end of the year for grain, cotton, oil, rice, beans, and seeds. During the year, PMA made a review of and revisions to parts 6 and 7 of the Commodity Loan and Purchase Handbook. Parts 8 and 9 of the handbook, respectively

entitled "Grain Maintenance Responsibilities and Procedure for Managing CCC Structures, Equipment, and Services" and, "Maintenance Instructions for CCC Grain and Grain Storage Structures," were issued.

Conditioning and Maintenance

Additional grain conditioning equipment, such as exhaust fans, grain turning and handling equipment, and cleaning screens, was procured. Considerable difficulty was encountered, however, in obtaining sufficient quantities of chemicals for fumigation of CCC-owned commodities. In cooperation with the Bureau of Entomology and Plant Quarantine, PMA initiated an experimental program aimed at developing a fumigant formula that will be effective, economical, and safe, and that can be made from chemicals not in short supply. Considerable work was done in the maintenance and repair of CCC-owned storage structures, such as painting, reinforcing, and development of new anchoring techniques. An experiment under way at the end of the year sought to evaluate different types of paint on metal surfaces in the hope of obtaining an economical coating better than the standard paints now being used.

United States Warehouse Act

As of June 30, 1951, licenses under the United States Warehouse Act were held by 1,508 warehousemen storing different commodities. Of this total, 916 were issued to grain warehousemen, 484 to cotton warehousemen, and 108 to warehousemen storing miscellaneous commodities. During the year, amendments were made to 218 licenses, 23 licenses were suspended, and 16 were reinstated.

The licensed capacity for grain storage, 449,000,000 bushels, reached the highest level in the history of the Warehouse Act. This represents an increase of about 69,000,000 bushels over the licensed capacity as of June 30, 1950. An increase in the licensing of grain storage warehouses along the Atlantic coast was noted.

Approximately 2.6 inspections each were made of licensed warehouses, and this number was made possible only by the drastic reduction in cotton stocks. More irregularities and violations of regulations issued under the Warehouse Act were detected in the fiscal year 1951 than in practically any other year in the history of the act. In several instances, criminal prosecution was initiated.

A careful study was made of problems involved in the storage of dry edible beans, which, in many areas, come direct from threshers to warehouses. These uncleaned beans, because of the high percentage of defects, must be handled and stored as United States Substandard grade. Because the percentage of defects varies widely between different lots, receipts for beans grading United States Substandard are not of much value for collateral purposes unless they set forth clearly the quantity and the quality of beans the depositor or holder of the receipt is entitled to receive and the warehouseman is obligated to deliver. Amendments to the regulations proposed before the end of the fiscal year would permit warehousemen to accept uncleaned beans, to store them with other uncleaned beans, and to clean them while in storage. Producers would be given a receipt listing the

gross quantity of uncleaned beans delivered, the amount of sound beans in each lot originally taken into the warehouse (determined by sampling), and the quantity of beans to be delivered against the receipt, either as cleaned or uncleaned beans.

Natural Cooler Facility

As in other recent years, the Natural Cooler Facility near Atchison, Kans., was used to store Government-owned commodities. In addition, experimental tests were conducted on the storage of wheat, corn, cotton, dry beans and peas, Austrian winter peas, and dried whole eggs.

Transportation of Government-Owned Commodities

PMA continued to arrange, in the case of Government-owned commodities destined for export, for transportation and storage from interior points to seaports. PMA also arranged for transportation and storage of Government-owned commodities moving to school lunch, relief, and other domestic outlets. Details of volume handled and destinations are included in sections dealing with specific commodities.

Several programs were handled as a result of barter negotiations whereby CCC delivered grain and cotton for certain strategic materials. A total of 51,387 bales of Egyptian cotton imported by the General Services Administration was received, fumigated, and transferred to storage. Ocean-shipping activities were high lighted by the inauguration of the Yugoslavia Assistance Program in January 1951, and the release of the first "General Agency" vessels from the Maritime reserve fleet for use to "ECA" countries, including Yugoslavia. Shortages of ocean-shipping space developed early in 1951, and in February 1951 the Economic Cooperation Administration arranged with the Maritime Administration for the first release of Victory Ships from the reserve fleet for bareboat charter to United States flag operators. PMA negotiated the charter for 7 of these vessels to meet commitments for Yugoslavia and Greece. In March shortage necessitated the release from the reserve fleet of "General Agency" vessels. PMA negotiated the charter of 10 of these vessels to meet commitments to Yugoslavia, Greece, and Austria for the movement of an aggregate of 96,062 long tons of grain.

During the year 62 vessels were chartered for the ocean transportation of 586,567 long tons, mostly grain; berth liner bookings totaled 112 vessels and 360,200 long tons of grain; and 311 vessels and 433,923 long tons of processed commodities. Recommended payment for ocean transportation charges totaled slightly more than \$17,000,000 for the year. Rate reductions initiated during the year resulted in an estimated savings of slightly more than \$275,000.

Improvements were effected in the internal transportation operations of PMA Commodity Offices, and provisions for more effective controls over field shipping activities in PMA State and county offices were incorporated in instructions. Although railroads have shown an increasing reluctance to grant special rates or privileges to the Government under section 22 of the Interstate Commerce Act, a number of

quotations were obtained. Those extending the time limit of storage-in-transit privileges were of major importance in the Department's transportation activities. The current index of section 22 quotations was being revised at the end of the year and will be issued to all PMA Commodity Offices.

A critical shortage of boxcars existed during the months of July, August, September, and October 1950, and considerable difficulty was experienced in obtaining equipment to move the old crop of grain from elevators so as to make room for the new crop. This shortage, which eased some in November, reached a peak during the week of March 3, 1951, when the daily shortage averaged 26,884 cars. Since March, however, there has been improvement in availability of cars, and as of June 30 the situation in all sections of the country was fairly good.

Transportation Rates and Services

Under the Agricultural Adjustment Act of 1938 and the Research and Marketing Act of 1946, the Secretary of Agriculture is authorized and directed to assist producers of agricultural products in obtaining and maintaining reasonable and equitable transportation rates, rules, and charges. As has been the practice in the past, activities under these authorities during the year were coordinated with those of farm and trade organizations, cooperative marketing associations, and the agricultural agencies of the various States.

Active participation included 108 actions before transportation regulatory bodies, before United States courts, and before carriers and their bureaus. Of these actions, 23 were of a general nature (8 concerned rail rates; 11, motor carrier rates, and 4, water rates), 5 affected cotton and cottonseed products, 13 affected dairy and poultry products, 7 were on fertilizer materials, 7 on fish and fishery products, 16 on fruits and vegetables, 18 affected grain and grain products, and 18 affected livestock and livestock products (including wool and mohair).

Of the two new activities begun in the fiscal year 1950, both were sufficiently advanced to be used in the most important general rail-rate case started in the fiscal year 1951. (1) The study of the financial position and needs of rail carriers was used as the basis of exhibits and testimony in *I. C. C. Docket Ex Parte 175*, wherein the railroads sought authority to increase these rates 15 percent over-all. (2) The analysis of savings to rail carriers in operational costs through Dieselization was used for exhibits and testimony in the same case.

A new project, initiated during the year, consisted of a series of studies under the general title of Factors Affecting Freight Rates on Agricultural Commodities. The first study, completed and released in May 1951, was entitled, "The Railroad Passenger Deficit."

Two motor carrier cases involving drawn-out litigation before the Interstate Commerce Commission were decided. One was the investigation by the Commission of agricultural products which are and are not exempt under section 203 (b) (6) of the Interstate Commerce Act. The Department was very active in this case. A large number of departmental scientists testified as to the handling, preparing, and shipping of some 450 commodities. The Department's position was upheld for most commodities, raw shelled peanuts, nursery stock, and cut flowers being the only exceptions.

The other case was the Commission's investigation into the practice of exempt motor carriers leasing their equipment and drivers to common motor carriers for return trips to agricultural producing areas. The Commission found the practice unlawful unless leases are of 30-day duration or longer. Some appeal from this decision may be taken because it is felt by the Department that it will deprive the farmers of much necessary truck transportation when it is vitally needed.

The Department participated in a case before the Federal Maritime Board where the practice of steamship conferences of making exclusive patronage contracts at reduced rates was attacked. The Board found the practice lawful but it was carried to a United States district court where the Board was overruled and its decision reversed.

Appearances were made and testimony given in numerous other proceedings before the various Federal and State transportation regulatory authorities in behalf of agricultural producers in connection with rail, water, and motor carrier rates and charges.

Cold Storage Report

The monthly Cold Storage Report furnished to food processors, preservers, distributors, warehousemen, and others interested in the marketing of foodstuffs information on stocks of about 80 food commodities stored in refrigerated warehouses throughout the United States. Such timely information as the monthly level of storage occupancy in both coolers and freezers was detailed by regions, States, and key cities. Approximately 40,000 cold storage reports were mailed during the year, in addition to distribution of the information contained in the report through the press and in trade publications. In addition to the regular monthly reports, summarization to provide a ready reference to the 1950 reports was issued. Monthly reports of selected fruits and vegetables, broken down by package size, were published. Numerous special reports and surveys, including a survey of the capacity of refrigerated warehouses in the United States and a directory listing approximately 1,800 refrigerated storages and other cold storage data, were made available.

CROSS-COMMODITY MARKETING RESEARCH

Continued progress was made in research on problems common to many commodities; that is, problems that cut across commodity lines. In this field is included research aimed at improving marketing facilities in producing areas and terminal markets; materials handling; merchandising; packaging; transportation; market news; and grades and standards. This cross-commodity research was carried on largely under authority of the Research and Marketing Act of 1946.

Improvement of Marketing Facilities

Work of planning and promoting the construction of satisfactory wholesale market facilities was continued vigorously, with 22 projects active.

New wholesale market districts were nearing completion in St. Louis, Hartford, San Antonio, and Columbia (S. C.). These four projects,

representing a total cost of about \$10,000,000, are expected to reduce distribution costs by several million dollars annually.

Plans for a wholesale facility in Boston were nearing completion by the end of the year, and in Richmond plans had been completed. An early start was expected on construction of a new market at Indianapolis. A proposed development for San Juan, P. R., consisting of docks, wholesale stores, meat-packing plant, grain elevator, feed mill, farmers' market, and public retail market, would handle a large part of the agricultural products grown on the island as well as most of Puerto Rico's food imports.

Little or no difficulty was encountered in obtaining materials for construction of markets. Wholesale market facilities consist mostly of one-story buildings and open sheds. These structures can be built from any one of a variety of materials, so that large quantities of materials in short supply are not required.

As part of the over-all work on marketing-facility improvement, a special study was completed to determine the most practical arrangement of railroad tracks for wholesale produce markets. It was found that the ideal track arrangement is one that will provide sufficient car spaces with the smallest outlay of capital and with the shortest mean distance from the car door to the stacking point in the store. The arrangement with double tracks parallel to the rear platform of the store provides the lowest rental rate per store unit and permits the lowest handling costs per car for the number of cars that can be accommodated on the limited track capacity it provides. The study showed, however, that each market presents special problems and that the best track arrangement for a market can be determined only after close study of all the factors involved.

Work was under way at the end of the year on a number of other projects in the general field of marketing-facilities improvement. These included research to determine the relation between the volume of commodities handled and the area of floor space needed in wholesale establishments; the best layout for wholesale frozen food stores; the correct design for tomato and banana repacking facilities; proper size, location, and design of country elevators; satisfactory methods of financing and managing wholesale produce markets; factors essential to the success of wholesale markets for perishable commodities in producing areas; and the kind of facilities and equipment that will most efficiently handle poultry and eggs.

Materials Handling

More than half the total cost of marketing goes to pay the wages of labor. With wages increasing, and shortages of labor developing, there has been growing pressure for research that will lead the way to more efficient use of labor and equipment. Such research was carried on during the year in stores and warehouses of wholesale fruit and vegetable distributors, commercial apple packing and storage warehouses, cotton warehouses, and receiving rooms of milk plants.

In the fruit and vegetable stores, improved methods of handling were developed and made available to the industry. Recording and transcribing equipment, for example, was developed for use in loading out delivery trucks. This equipment reduced labor requirements a third.

Improved handling methods are being developed in commercial apple packing and storage warehouses of the Pacific Northwest through a series of time studies. These studies involve the handling of 4 types of packages of apples with 10 different types, or combinations of types, of handling equipment. Improved methods expected to develop from these studies can, with modifications, be used in apple packing houses and similar establishments in other parts of the country.

The results of a study of milk handling in certain Indiana plants indicated possibilities for substantial savings in labor costs.

A study of handling in cotton warehouses, begun in 1949, is aimed at determining the most efficient ways of handling cotton into, within, and out of warehouses where manual labor has been used. Preliminary reports on the study show that improved methods can reduce materially costs of stacking and weighing cotton, and of moving it from storage to compress. During the year, 232 time studies were made in 55 cotton warehouses located in 44 cities throughout the cotton area. When the study is completed, an over-all report will be issued.

Merchandising, Packaging, and Other Marketing Functions

An advisory committee, composed of wholesalers and retailers, was established to recommend work to be done in the merchandising field. All work undertaken in this field since establishment of the committee has followed committee recommendations.

Private groups working with PMA on specific studies include three national trade organizations and a large number of individual wholesale and retail organizations.

A report on a study of check-out operations in retail self-service food stores was released in January 1951. Before the end of June, the check-out counter developed in the study had been installed in more than 1,000 retail stores. One national retail food chain has adopted it as standard equipment; others are experimenting with it. Hundreds of local chain stores and independent firms have asked for plans and details of the counter, and many have installed it. The use of the check-out counter increases productivity of the checker by almost 40 percent, and reduces congestion in the store and on parking lots. (A description of the check-out counter was included in the Report of the Administrator of the Production and Marketing Administration, 1950.)

Another study showed how productivity per man-hour can be increased 60 to 85 percent over former methods by using improved procedures for receiving groceries, marking prices on individual items, and stocking shelves of retail stores. Increased efficiency was obtained primarily through replacement of two- and four-wheel trucks by wheel-type roller conveyors for receiving groceries and by rearranging the back rooms of stores. Four usual methods of price-marking merchandise were analyzed and resulting improvements showed increases of from 56 to 90 percent in the number of cases price-marked per hour. The study showed that employees in the stores surveyed stocked shelves at an average of 22.6 cartons per man-hour. The average could be raised, the study showed, to 29.4 cartons through the use of a 4-wheel truck, and by proper use of the hands.

The average could be increased to 34.3 carton per man-hour through the use of a leaf-type shelf developed in the study.

A cooperative study by PMA and two retail store organizations is expected to find improved ways of handling meat in stores, either in service or self-service establishments.

A major study on the prepackaging of meat, poultry, and cheese showed that from 7 to 11 percent of the products offered for sale in prepackaged form required rewrapping. Principal reasons for rewrapping, in order of importance, were: Necessity of making price changes, discoloration, unattractive packaging, and broken film. The study showed the amount of rewrapping that is necessary for each type of product, the reasons for rewrapping, and the cost involved. It points out ways to reduce the amount of rewrapping.

Another project had to do with the effect of mechanical dispensers on orange juice sales. This study showed that sales were about 18 percent greater when juice was sold from mechanical dispensers than when sold from jugs. It also revealed that dispensers seem to be relatively more effective in stimulating sales in small stores than in large ones, and that fountain managers believe dispensers are more efficient than jugs in serving juice.

Other merchandising studies measured preference of consumers for buying oranges by weight or count in selected cities, their preference for buying in packages or bulk, and the type and size package in greatest demand.

Preliminary observations in a study of shelf space utilization in retail stores revealed great differences among commodities and stores in the relationship between the shelf space devoted to an item and its sales. PMA started the shelf-space experiment, expected to be completed next year, to determine the effect on sales of varying numbers of rows of items on display.

Three new lines of study were launched to determine how wholesale and retail distributors of food can improve their operating efficiency through cooperation. Attention is being given to the possibilities of improving marketing efficiency by reducing such wholesaling costs as delivery, loading, handling, and filling orders, and by placing more emphasis on improvement of retail pricing procedures, informational aids, and store layout. Several case studies were made of individual wholesalers who had effected one or more improvements through close cooperation with retail outlets. A report will be prepared and made available to wholesale and retail organizations, pointing out methods and practices that appear to have been most satisfactory.

Transportation Research

The effects of rail car shortages can be minimized to a considerable extent by making better use of existing cars. On the basis of a study of the actual movement of 36,000 carloads of commodities by rail, a sample formula has been developed for measuring delays through the use of carrier data. The formula, a statistical unit called a "movement ratio," is a device for determining what proportion of time a loaded car is moving and how much time it stands still. By use of this statistical unit, it is expected that railroads can determine whether car idle time is increasing or decreasing and where the greatest delays are. Considerable interest has been shown in its use.

Work was continued on methods of improving the regulation of temperature in refrigerator cars. In tests conducted on the transportation of frozen foods from Florida to northern markets, the most satisfactory performance was given by two mechanically refrigerated cars, one equipped with gasoline-powered units, the other with a single Deisel-operated unit. In each of these cars, the commodity temperatures were maintained within one-half of 1° F. of the loading averages, and the maximum temperature encountered in any part of these cars was 4°. Two cars refrigerated with dry ice gave satisfactory results, maintaining commodity temperatures at or slightly below temperatures at the time of loading.

A number of tests also were conducted on the performance of refrigerated motortrucks used in transporting frozen foods. Tests showed that certain modifications within trucks would eliminate the problem of inadequate circulation of air which caused undesirable temperature variations inside the trucks. A report on the truck tests, including recommendations for improvement of refrigeration in them, was completed.

Work progressed in an attempt to find more efficient ways of loading and unloading grain into railroad cars and trucks. Many elevators lack efficient equipment for low-cost unloading of grains from cars.

Several studies were conducted to find better ways of loading, stowing, and bracing commodities in railroad cars to reduce loss and damage in transit. One of these studies produced a new and more efficient container for shipping lettuce and carrots. Records on the movement of 6,440 cars of lettuce and carrots shipped in the new crate showed about 50 percent less breakage than was experienced with the old Los Angeles crate.

Studies made to reduce loss and damage of rail shipments of cantaloups proved conclusively that when cantaloup crates are loaded on their ends the strong ends of the crates absorb the shocks of moving trains with less breakage than is the case when crates are loaded on their sides. Tests showed that the new loading method cut container breakage by two-thirds from the older method; made it possible to load 24 more crates per rail car; and provided a reduction of 50 percent in the amount of melon bruising. The total potential savings from this change in method of loading cantaloups will amount to more than a million dollars a year. It is believed that this principle also will have wide application in the shipping of other commodities.

A study of the movement of 3,650 carloads of dressed beef showed a close relationship between poor running gears of meat-type refrigerator cars and the amount of damage to meat carried in the cars.

Work has been started in efforts to develop large, collapsible, reusable containers for transportation of consumer-size packages of various perishable commodities. These containers actually are pallets with collapsible sides, holding sufficient volume to make them adaptable to fork-lift truck handling.

Studies To Improve Market News and Grading

Two of the oldest marketing activities conducted by the Department of Agriculture are the market news service and the inspection and grading service. During the long time these services have been

carried on, many changes have taken place in marketing practices, methods of transportation, means of communication, and areas of production. With these changes in mind, PMA during the year carried on three special lines of research aimed at improving the effectiveness of wholesale market news services; exploring the possibility of developing useful retail market news; and determining adequacy of grades and standards for farm products.

During the year, six features of a recommended program for development of a well-rounded wholesale market news service were adopted.

A study of the practicability and need for market news reporting of prices received by creameries was completed. Comparisons of terminal market quotations with prices creameries received for the period of the study brought out the following facts.

Terminal market quotations for certain grades of butter were usually substantially lower than the average prices creameries were receiving; usually there was little price distinction between grades A and B in local sales of creameries. The average price difference between the print butter and that of the parchment wrap was less than the cost of placing the butter in cartons. The differences in prices among creameries for the same grade and package sold locally were wide—in some cases as much as 6 cents.

Ninety percent of the creamery managers and owners, and 58 percent of the directors, reported that they used the information mainly in bargaining for more favorable wholesale prices, in assuring themselves that their prices were satisfactory, and in setting up local prices.

To help bring about greater uniformity in the reporting of market news services, studies of existing market reports issued in different cities were made to find out what differences existed among the data reported for the various markets. Results of the studies were made available to officials in charge of the market news services to point the way to corrective action.

PMA has undertaken the first adequate appraisal of dissemination of market news by daily newspapers, heavily depended upon to carry such information to producers and members of the trade. During the year, a survey was made of all the English language daily newspapers in the United States, and copies of 1,600 out of about 1,800 daily papers were reviewed. A report on market news coverage by these papers will be published.

Under a contract with the Iowa State College, a study was completed of the effectiveness of radio, newspaper, and mimeographed reports in supplying market news information to Iowa farmers. Three manuscripts, including one on radio, one on newspapers, and another on the general situation, are to be published.

An effort is being made, in cooperation with the University of Arkansas, to determine the practicability of reporting local feed-market news. Methods never have been developed to permit the reporting of such local price information, much needed by poultrymen, dairymen, and livestock feeders. In this project, special attention will be given to reporting the relative value of feeds in terms of current prices, the current prices in local areas, and information on current and prospective supply situations.

An experimental retail market news project in Baltimore showed that it was possible to obtain weighted average retail prices of more

than 100 food items in Baltimore by collecting them weekly from a well-selected sample of 50 grocery stores. The study also showed that such a service can be operated at low cost. After the Baltimore retail market news report had been supplied to them for several weeks, users were polled for their reactions. About 80 percent of the housewives said they found the reports useful as a guide for helping them to substitute planned buying for impulse buying, to make better judgments on good buys, and to select stores for purchases. Seventy-five percent of the retailers who received the report said they used it to keep up to date with retail price changes, to keep in touch with the competitive price situation, and to keep their prices in line with other stores. The reports were used by 94 percent of the fresh fruit and vegetable wholesalers questioned; 60 percent of the meat slaughterers and processors; 46 percent of the fruit and vegetable canners; 57 percent of the frozen-food processors and distributors; 29 percent of the dairy, poultry, and egg wholesalers; and 22 percent of the canned-goods wholesalers. Farmers receiving the report made little use of it—their chief use seeming to be in comparing wholesale and retail price changes.

Three studies were made of the adequacy of the Department's grading and inspection program. One of these measured the extent of use of the grading and inspection services for fresh fruits and vegetables by commodities and States and the trend in the use of these services since the program began. Another measured the relationship between quality of poultry—in terms of United States and commercial grades—and market prices paid. A third study in this field continued a review of the principles underlying the development of standards.

COMPLIANCE AND INVESTIGATION

PMA again took vigorous action during the year to prevent criminal and civil frauds; violation of regulations; noncompliance with laws, orders, and regulations; and other irregularities which might have interfered with the effectiveness of PMA and CCC programs and operations. In addition, accounting systems were installed and periodic audits were made of the books and records of milk-market administrators, control committees, and others, where such action was authorized or required by contracts or marketing agreements and orders. Assistance was given to the Office of the Solicitor of the Department of Agriculture, the Department of Justice, and various United States attorneys in connection with the preparation and prosecution of court cases.

A total of 1,525 cases was investigated during the 1951 fiscal year. Sixty-six new criminal cases were initiated, and fines totaling \$88,010 were imposed in 48 cases. In addition, suspended fines and suspended jail sentences in other cases amounted to \$600 and 7 years, respectively, while probationary time totaled 40 years.

Recoveries of money fraudulently or improperly obtained from the Government totaled \$1,013,402. Savings—claims made against the Government but not paid—amounted to \$214,989. Collections of delinquent loans, liquidated damages, and penalties amounted to \$718,238. Fines, recoveries, savings, and collections, in all, totaled \$2,034,639.

Civil suits adjudicated during the year resulted in 13 judgments in favor of the Government. In 3 cases injunctions were obtained to

restrain violators from committing further violations of Department regulations. Thirty-eight new civil actions were instituted.

The foregoing reflects positive compliance results in the way of court action and in terms of dollars and cents. Also of substantial benefit, although not calculable in the same manner, is the factor of deterrence brought about through general public knowledge that investigations are being made, which are followed by appropriate court action where warranted. The result is increased respect for and greater compliance with PMA and CCC programs and regulatory acts.

At the end of the fiscal year, 176 cases were under active investigation and 288 unassigned cases were awaiting investigation. In addition, there were 496 completed cases in various stages of action leading to ultimate disposition. New requests for investigation were received at the rate of 133 per month during the 1951 fiscal year.